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# Ohio Economic Trends Review

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*Ohio Economic Trends Review* publishes articles about current public finance and economic development issues of interest to state and local government policymakers and administrators, scholars, students, and individuals who monitor the state's economic and financial condition for the private sector.

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# Ohio Economic Trends Review

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# A Decade of Decline:

## A Longitudinal Look at Big City and Big County Strategies To Cope With Declining Revenues

**M**any local governments have now endured a decade of fiscal decline because of periodic reductions in external funding (federal and state) and slowdowns in the rate of growth of the state and local government sector. This research examines the extent to which six large jurisdictions (three cities, three counties) under fiscal duress avoided political conflict and prevented further fragmentation of their authority between 1978 and 1987. The results showed that local officials generally chose retrenchment strategies (revenue, expenditure, and borrowing) with the least anticipated political opposition; but when hard choices had to be made (personnel reductions), they were made without hesitation. The timing of politically unpopular choices to coincide with downward trends in the private sector reduced the level of political fallout, even in heavily unionized, socioeconomically diverse communities. The results also showed that local officials strongly endorsed, rather than opposed, strategies that further fragmented their authority (privatization, intergovernmental cooperative agreements), because these approaches produce significant personnel and capital savings in the short term. Finally, the results indicated that the long-term cumulative effects of short-term decremental decision-making on the quality of life (as measured by drops in bond ratings) were negative in only one-third of the jurisdictions.

*This article emerged from a panel at the 1987 American Society for Public Administration conference in Boston, Massachusetts, sponsored by the Section on Intergovernmental Administration and Management. The authors are: Jessie M. Rattley, mayor, Newport News, Virginia; Patrick J. Ungaro, mayor, Youngstown, Ohio; William R. Brown, Jr., director of finance and administration, Houston, Texas; Scott O'Donnell, director of administration, Allegheny County, Pennsylvania; Donald L. "Pat" Shalmy, county manager, Clark County, Nevada; Norm Hickey, chief administrative officer, San Diego County, California; Susan A. MacManus, professor of public administration and political science, University of South Florida in Tampa, and former director of the Ph.D. Program in the College of Urban Affairs at Cleveland State University (CSU); with the assistance of Denise Jubell, a 1987 graduate of the bachelor's program at the College of Urban Affairs, CSU.*

### Four Phases Of Retrenchment Research

"Many local governments faced with fiscal stress have stumbled into a period of helpless indecision, unable to make necessary [adjustments] for fear of political conflict and further fragmentation of authority" (Levine, Rubin and Wolohojian, 1981a: 619). This statement was representative of the hypotheses guiding the earliest examinations of local government retrenchment strategies. These early studies (refer to Levine, 1978; Howell and Stamm, 1979; Levine, 1979; Biller, 1980; Bryce, 1980; Eastman, 1980; Levine, 1980; Levine and Rubin, 1980; Lewis and Logalbo, 1980; Wolman, 1980; Bowman, 1981; Florestano, 1981; Levine, Rubin and Wolohojian, 1981b; McCaffery, 1981; Danziger and Ring, 1982; Kirlin, 1982; Martin, 1982; Menchick, Fernandez and Caggiano, 1982; Rubin, 1982; Sears and Citrin, 1982) emerged in the late 1970s and early 1980s — a period of citizen-imposed taxing and spending limits, high inflation and some reduction in federal aid.[1]

The next wave of retrenchment studies followed the first round of budget cuts under the Reagan administration's Omnibus Reconciliation Act of 1981 (P.L. 97-35) (refer to Abrams, 1982; Bozeman and Straussman, 1982; Ellwood, 1982; Clark and Ferguson, 1983; Fossett, 1983; Greiner and Hatry, 1983; McGowan and Stevens, 1983; Nathan, Doolittle and Associates, 1983). A recession and another round of deep federal budget cuts in fiscal year 1983 produced another wave of "coping research" (refer to Burchell et al., 1984; Carr, 1984; Downs and Rocke, 1984; Behn, 1985; Pammer and Morgan, 1985; Shefter, 1985; Gottdiener, 1986; MacManus and Clark, 1986; Starling, 1986). The abolition of the most widespread flexible federal aid program (General Revenue Sharing) in 1987 is already yielding the fourth round of retrenchment research (refer to Greene, 1987).

In summary, the retrenchment literature has emerged in four phases:

1. Post-Proposition-13 Tax Revolt Phase (1978-80)
2. Post-Round-One Reagan Budget Cuts (1981-83)
3. Post-Recession-Round-Two Reagan Budget Cuts (1984-86)
4. Post-General-Revenue-Sharing Period (1987-88)

Each new wave of research has focused on the *planned* reactions of public officials to that latest round of cuts.

Most local governments have now endured a decade of fiscal decline. But no study has systematically examined the *cumulative* effects of 10 years of declining external aid — federal and state — especially in jurisdictions with non-diversified economic bases. Cutbacks are magnified in such jurisdictions when those bases decline due to national economic cycles and/or the transition from a manufacturing- to a service-based economy. For example, many jurisdictions, like Houston, have "had to learn to cope with less, irrespective of what has happened at the federal or state level."[2]

## The Study

The purpose of this research is to determine the extent to which local governments under fiscal duress have remained indecisive, avoided political conflict, and prevented further fragmentation of their authority during a decade of decline. We examine how six large jurisdictions — three cities (Houston, Texas; Newport News, Virginia; and Youngstown, Ohio) and three counties (Allegheny County, Pennsylvania; Clark County, Nevada; and San Diego County, California) — have reacted to retrenchment.[3] All have experienced federal aid reduction, and 67 percent have been hit with declining state aid (see Table 1). None has a highly diversified economic base (see Table 2).

The chief executive officer (or finance director) of each jurisdiction was asked to identify the major *political* problems created by declining federal and state aid from 1978-87 and to describe how these problems were resolved. Those answers are used to discern whether the jurisdictions were indecisive because of perceived political constraints. The CEOs also were asked to delineate:

- programs transferred to the not-for-profit and/or private sectors and
- cooperative activities engaged in with other local governments.

These two measures will help determine whether fragmentation of authority occurred during this decade of decline.

## The Potential For Political Problems

The political dimensions that have received the most attention at the local level are:

- citizen participation in fiscal limitation decision (taxing and spending lids, borrowing referenda) and
- the distributional, or equity, consequences of cutbacks (Ellwood, 1982; Nathan and Doolittle, 1983; Shefter, 1985).

The relative political liabilities of adopting various retrenchment strategies, as perceived by elected officials, have not received much attention. While the influence of the election cycle on budgetary decisions has been well documented at the national level (refer to Tufte, 1978), it has been downplayed in studies of local government retrenchment strategies.

The short election cycle of local governments (see Table 2) produces reactive strategies that create the least political conflict within that time frame. "...Local officials tend to take a short-term view of their problems. Their imperative is to save each fiscal year by trimming costs in areas where citizens, especially voters, are unlikely to notice severe deterioration." (Levine, Rubin and Wolohojian, 1981b: 14).

The same kind of short-term temporal considerations often dictate which revenue and borrowing coping strategies are imposed. Strategies with the greatest potential for short-term political gains are preferred to strategies with longer-term economic payoffs unless "over time a series of small decrements in services and benefits...add up to a large-scale deterioration in the quality of life of local inhabitants, especially those that are most dependent on public services" (Levine, Rubin and Wolohojian, 1981b: 14).

Local governments' reactive capacities, especially with regard to taxation and borrowing, are often severely restricted by state legal constraints (refer to Ladd, 1978; MacManus, 1981; 1983b; Lowery, 1983a; 1983b; ACIR, 1986b). The loosening of the constraints takes several years of intense lobbying in the state legislature by groups of local government officials, followed by a year or more of securing local voter approval. In other words, years of effort are required to remove legal constraints.

In summary, retrenchment strategy selection (revenue, expenditure and borrowing) is dictated by local officials' perceptions of voter taste, the electoral time frame, the legal environment, and, of course, fiscal distress.

### *The Politics of Revenue Raising Strategies*

Political constraints on the property tax have persisted throughout the decade of decline in most jurisdictions. The Advisory Commission on Intergovernmental Relations (ACIR) annual surveys (*Changing Public Attitudes on Governments and Taxes*) show that the percentage of respondents identifying the local property tax as the worst tax declined only slightly between May 1978 (32 percent) and May 1986 (28 percent). New taxing caps have continued to be imposed, although not at the pace immediately following passage of California's Proposition 13. Proposals to eliminate homestead exemptions have consistently been defeated by the voters (MacManus, 1987). Other attempts to eliminate property tax loopholes have also met defeat. For example, the granting of property tax exemptions and rate reductions to promote economic development has continued, in spite of numerous economic studies showing they are not significant determinants of industrial location decisions (for a review of this literature, see Corporation for Enterprise Development, 1987). What matters is the perception of local officials and many citizens that such incentives are critical, not just in attracting new industry, but in keeping the old. There is a fear that increases in local property taxes will have the long-term effect of pushing established businesses and industries out of the community.

In spite of the weighty evidence against the political wisdom of selecting property tax increases as a reactive strategy, there is some indication that voters, when faced with the choice of raising the property tax or cutting back popular services and programs, will often choose the tax increase (Lowery, 1983a; 1983b). However, if expenditure reduction strategies are used to make certain revenue strategies more palatable, the link between the revenue and the specific expenditure(s) must be made clear to the voters.

Taxpayers' ability to see what they are getting for their money (which intensifies during recessional periods) makes user fees and sales taxes more popular gap-closing devices than property or income taxes (Mushkin and Vehorn, 1977; Holland and McCarney, 1983; McCarney, 1983; Kelley, 1984). "Fees and charges give an air of greater choice to citizens who believe that if they do not choose to consume a particular good or service, then they do not have to pay. This contrasts with the popular view among citizens that [property and income] taxes are primarily devoted to other people's well-being" (Stein, Sinclair and Nieman, 1986:117). The most recent ACIR survey results show that 49 percent of the respondents rank user fees as the best way to raise more money for local governments, compared with 26 percent for the local sales tax, 9 percent for the local income tax, and 7 percent for the local property tax (ACIR, 1986a). The same survey reports that support for user fees has declined slightly since 1981, whereas support for local sales taxes has increased somewhat.

Local government use of non-property taxes (sales, income) is often prohibited by the state. For example, in 1976, only 24 states permitted local sales taxes and 11 permitted local income taxes.[4] Even in the states granting authority, the authority was rarely extended to all types of local governments, although more were granted these powers between 1976 and 1985. By 1985, 32 states ( + 33 percent) permitted local sales taxes; 13 ( + 18 percent) allowed local income taxes.[5] Cutbacks in federal aid and other fiscal woes helped local officials pressure some states to extend local non-property taxing options.

The popularity of local sales taxes is, however, subject to some constraints. Their regressivity produces political opposition in socioeconomically heterogeneous communities. (The same holds true for user fees [Stein, Sinclair and Nieman, 1986], although other studies show how this criticism can be overcome [Pascal, 1984].) Secondly, their elasticity makes them less attractive gap-closing devices during recessional periods. But they are still relatively large revenue producers when imposed. Also, given the choice of property, income, or sales taxes and user fees, even the poor opt for sales taxes and user fees (ACIR, 1986a). (Income taxes are also seen as having a negative impact on economic expansion and business retention efforts in the long term, but they are seen as having a significant positive short-term revenue enhancement effect.)

Where states have not chosen to loosen restrictions on local use of non-property taxes, local officials have lobbied hard for increased *state* aid levels (MacManus, 1984; 1987; Morgan and England, 1984). This is particularly the case where state lotteries have been created (Mikesell and Zorn, 1986). However, state governments have had their own fiscal problems as a result of federal aid cutbacks, recessions, more federal mandates, rising litigation expenses and so on. Consequently, the states have sought new revenue sources (for example, lotteries) for themselves and have not been particularly receptive to increasing the proportion of state revenue shared with local governments. State officials are aware of surveys showing only a modest level of public support for using state aid to replace lost federal dollars (ACIR, 1986a: 46).

In summary, the revenue coping strategies that might be expected to have the least political fallout at the *local* level are: imposing/raising user fees, increasing state aid and promoting economic development (expan-

**Table 1: Changing External Aid Dependency Levels, 1978-87**

| | Federal Aid[1] | | | State Aid[1] | | | Federal & State Aid[1] | | |
|---|---|---|---|---|---|---|---|---|---|
| **Jurisdiction** | **1978** | **1987** | **% Change** | **1978** | **1987** | **% Change** | **1978** | **1987** | **% Change** |
| **Cities** | | | | | | | | | |
| Houston, Texas | 15.0 | 0.8 | − 54.7 | 3.4 | 1.2 | − 64.7 | 18.4 | 8.0 | − 56.5 |
| Newport News, Va. | 18.0 | 10.0 | − 44.4 | 23.0 | 32.0 | + 39.1 | 41.0 | 42.0 | + 2.4 |
| Youngstown, Ohio | 17.2 | 23.3[3] | + 35.5[3] | 9.8 | 13.2[3] | + 34.7[3] | 27.0 | 36.5[3] | + 35.2[3] |
| **Counties** | | | | | | | | | |
| Allegheny County, Pa. | 11.4 | 6.1 | − 46.5 | 26.2 | 19.7 | − 24.8 | 37.6 | 25.8 | − 31.4 |
| Clark County, Nev. | 32.9 | 4.6 | − 86.0 | 1.2 | 0.4 | − 66.7 | 34.1 | 5.0 | − 85.3 |
| San Diego County, Calif. | 28.8 | 19.5 | − 32.3 | 25.1 | 36.4 | + 45.0 | 53.9 | 55.9 | + 3.7 |

Notes: [1] Dependency level calculated by $\frac{\text{each type of external aid}}{\text{total general revenue}}$

[2] percentage change calculated by $\frac{1987\text{-}1978}{1978} \times 100$

[3] Youngstown data are only available for FY 1985

## Table 2: City and County Characteristics

| Jurisdiction | Population 1980 | % Change '70-'80 | % Black 1980 | % Hispanic 1980 | Bond Rating '78 | Bond Rating '87 | Major Economic Base | Term of Office of Elected Officials | FTE Employees 1978 | FTE Employees 1985 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cities** | | | | | | | | | | |
| Houston, Texas | 1,595,138 | +29.3[1] | 27.56 | 17.60 | AAA | AA | Petrochemical | 2 | 13,726 | 20,649[2] |
| Newport News, Va. | 144,903 | + 4.9 | 31.54 | 1.80 | A | AA | Shipbuilding | 4 | 5,772 | 5,409 |
| Youngstown, Ohio | 115,436 | −18.1 | 33.40 | 3.39 | A | Baa | Steel | 2 | 1,522 | 969 |
| **Counties** | | | | | | | | | | |
| Allegheny, Pa. | 1,450,085 | − 9.7 | 10.35 | .56 | AA | AA | Steel-1978<br>Service Indus-1987 | 4 | 8,592 | 7,213 |
| Clark, Nev. | 463,087 | +69.5 | 9.98 | 7.59 | A | A | Gaming | 4 | 5,060 | 6,390 |
| San Diego, Calif. | 1,861,846 | +37.1 | 5.61 | 14.75 | $A_1$ | $A_1$ | Military/Tourism | 4 | 11,296 | 11,520 |

Note: [1] Houston's population was reduced by 85,000 from 1985 to 1987
[2] Houston reduced its payroll from 21,915 (May 1986) to 20,741 (February 1987)

sion and diversification of the tax base). Strategies with the greatest potential for political opposition are those involving the local income and property taxes.

*The Politics of Expenditure Reduction Strategies*

Elected officials tend to choose expenditure reduction strategies that produce the greatest cost savings in the short term, with the least political fallout. The two most popular techniques are:

- delaying or canceling capital inprovement projects and capital asset purchases, and
- personnel reduction.

Capital and personnel expenditures are the two big-ticket items in most local government budgets (Aronson and Schwartz, 1984). Personnel reduction involves the heaviest political fallout, especially in strong public sector union environments (Clark and Ferguson, 1983; Greiner and Hatry, 1983; Shefter, 1985).

Federal aid cutbacks have often been the basis of justification for the most politically difficult personnel reduction activities (permanent layoffs, firings, elimination of subcontractors — especially social service non-profits) (MacManus, 1986). But other studies have shown that one of the primary long-term effects of certain federal aid programs has been the creation of heavily politicized local demand for them (refer to Peterson, 1981; Fossett, 1983; Burchell, 1984; Browning, Marshall and Tabb, 1984; MacManus, 1985a; 1985b). Many of these programs greatly increased the clout of their clientele groups (poor, minorities). Thus, one would expect that the use of federal aid cutbacks as justification for personnel reductions and abolition of politically popular programs would be a more politically unacceptable strategy in socioeconomically diverse communities.

Less politically volatile spending reduction strategies include cutbacks in low-priority or non-basic services and activities (general government including budget, administration, and planning; libraries; and parks and recreation). Some refer to this as cutting on the basis of the hierarchy of community needs (McInturff, 1980; Wolman, 1980). Use of citizen surveys to identify the hierarchy of community priorities is very common (Hatry and Blair, 1976; Rosener, 1982; Wilson, 1983; Crosby, Kelley and Shaefer, 1986). However, there is little empirical evidence that cities actually use this strategy extensively (Menchick, Fernandez and Caggiano, 1982; Greiner and Hatry, 1983; MacManus, 1983a).

Techniques that have been shown to produce personnel *and* capital savings are among the most attractive retrenchment strategies: contracting out and transferring functions to other governments and/or the private sector (refer to Mushkin, 1972; Edwards and Stephens, 1977; Hanrahan, 1977; Savas, 1977, 1980; 1981; 1982; Fisk, Kiesling and Muller, 1978; Bennett and Johnson, 1979; Poole, 1980; Straussman and Farie, 1981; Greiner and Hatry, 1983; Hatry, 1983; DeHoog, 1984; Fisk and Muller, 1984; Florestano and Gordon, 1984; Marlin, 1984; Marlowe, 1985; Ferris and Graddy, 1986; Perry and Babitsky, 1986). Both strategies are often labeled "privatization." Both have the effect of fragmenting a jurisdiction's control over the delivery of services.

The political liabilities of contracting out or transferring the function can often be great, especially if public employees will lose their jobs (Pammer and Morgan, 1985), and especially in union environments. As Wolman notes (1980: 238): "The 'efficiency' advantage of contracting out results from the high wage rates and work rules of the municipal labor unions; [thus,] the opposition of these unions to this strategy greatly limits its applicability in communities where unions are reasonably strong."

The long-term negative consequences of contracting out are perceived by some local officials as a fiscal time bomb with tremendous political fallout. Specifically, they fear the emergence of "uncontrollable private monopolies," which might be more expensive than services provided by the city, even during fiscal distress. However, the short-term fiscal benefits of contracting out prevail.

Use of volunteers and private fiscal resources are also politically popular retrenchment strategies; they are not big gap-closing devices, but they work (Bjur and Siegel, 1977; Hawkins, 1986). For example, Hawkins (1986: 58) found that "although less prominent, and probably less important, voluntary contributions from the private sector to government and to private-sector organizations that provide quasi-governmental services do make a difference... While no one would claim that these expenditure reduction strategies eliminate basic problems they are seldom trivial to their beneficiaries." Coproduction — the use of citizens in the delivery of urban services as a way of reducing cost — has been studied by a number of researchers (Rich, 1977; 1980; Brudney and England, 1980; 1983; Sharp, 1986; Whitaker, 1980; Warren, Harlow and Rosentraub, 1982; 1984; Greiner and Hatry, 1983; Ferris, 1984) and found to be effective.

Another politically attractive cutback strategy is productivity improvement. A number of studies have shown that productivity improvements can generate cost savings (refer to Rapp and Patitucci, 1977; Levine, 1980; The Urban Institute, 1980; Washnis, 1980; Greiner et al., 1981; Ammons and King, 1983; Clark and Ferguson, 1983; Rabin, Hildreth and Miller, 1983; Ammons, 1984; Epstein, 1984; Malan et al., 1984; Miller, T., 1984; Davis and West, 1985; Morley, 1986). Government employees can be expected to oppose productivity strategies, especially when they call for

- reduced wages without job responsibility cutbacks,
- increased responsibility combined with attrition and hiring freezes without pay increases, and
- layoffs and firings as a consequence of new equipment and automation.

However, while productivity improvement strategies may create political heat from employees, they often make political hay with constituents who believe that "local governments can absorb substantial cuts in spending without any real effect on the level of service provided, simply by cutting waste and achieving greater efficiency" (Wolman, 1980: 237-8).

Some types of cooperative agreements, such as pooling of purchases, with other local jurisdictions are also politically popular retrenchment strategies with the public (ACIR, 1985). But cooperative arrangements of a grander scale, such as consolidation of metropolitan governments, have never been politically viable (Clark and Ferguson, 1983). Government consolidation usually requires state approval, as well as local approval in each of the affected jurisdictions. (However, it should be noted that consolidations of functions are becoming more common among small rural jurisdictions.)

In summary, the expenditure reduction strategies with the least-expected political fallout are those with less potential for employee opposition: volunteerism; reduction in non-essential, low-priority services; minor cooperation with other local governments; and delay or cancellation of capital projects and capital assets acquisition. Except for the last item, the monetary savings of these strategies are often insufficient — a situation that forces local governments to choose among the strategies that save the most in the short term *and* produce the next lowest level of political conflict: productivity improvement, contracting out, or transferring functions to the public and private sectors, especially if arrangements are made for transferring public employees to other jobs. More severe personnel reduction strategies (firings, layoffs and elimination of subcontractors) have the most negative political consequences for elected officials, although this may be more of a problem within local government than in the community at large, particularly if the community is suffering as well. Borrowing strategies are usually exhausted before stringent personnel strategies are employed.

### *The Politics of Borrowing Strategies*

Debt has been a popular gap-closing strategy for quite some time, because it has less severe political consequences than either raising taxes or reducing spending levels (Wolman, 1980; Kelso and Maggiotto, 1981; MacManus, 1981; Herbst, 1982; Clark and Ferguson, 1983; Hamilton, 1983; Matzer, 1983; Petersen and Hough, 1983; Sbragia, 1983; Hatry, Millar and Evans, 1984; Hatry and Peterson, 1984; Hatry and Steinthol, 1984; Peterson et al., 1984; Pagano and Moore, 1985; Weiss, 1985; Sharp, 1986; Snyder and Stegman, 1986; Chapman, 1987). In fact, it is often the first approach used. As Pammer and Morgan note: "When financial problems are first recognized, cities usually take a modest approach by drawing down their surplus and borrowing money to support operating deficits. This response usually buys time and delays the necessity of raising taxes or reducing services and programs, which can mobilize political resistance" (1985:1).

In recent years, revenue bonds have become more popular than general obligation bonds, primarily because revenue bonds do not require voter approval. Revenue bonds are "flexible, less visible, and strategically manipulable political instruments" (Sharp, 1986: 1286). Although they are riskier and most costly in interest, this is less of a short-term than long-term liability to a local political figure.

There is another reason for increased reliance on revenue bonds — state debt ceiling limits on general obligation (G.O.) borrowing. Many jurisdictions have reached their G.O. borrowing limits after a decade or more of fiscal decline.

Refinancing of past debt (short- and long-term) is another politically popular retrenchment strategy, but one that is somewhat less lucrative than a new bond issue (Harrell, 1986; Straussman, 1981; MFOA, 1982).

In summary, borrowing strategies expected to carry the heaviest political baggage are issuance of general obligation bonds. Less likely to generate political conflict are issuance of revenue bonds, refinancing of past debt, and even short-term borrowing in low-interest-rate periods.

We expect to find that the retrenchment strategies selected by our six jurisdictions over the past decade were those that produced the greatest short-term fiscal benefits with the least amount of anticipated political conflict and fragmentation of authority. (See Table 3 for a list of hypothesized political fallout from each retrenchment strategy and the time frame of major benefits.) We do not anticipate evidence of "helpless indecision," in spite of the potential for political conflict. The failure to act (a fiscal collapse) would generate even greater political problems for elected officials than individual retrenchment techniques.

## Avoidance or Reaction?

The major political challenges confronting all six of our local governments in the decade of decline were:

- Continued demand by citizens for services no longer funded by the federal and state governments;
- Increased restrictions on legal and fiscal authority (imposed by citizens and by federal and state mandates);
- Pressure to raise more revenue; and
- Pressure to reduce spending.

There was no evidence of rampant "indecision" or an unwillingness to face up to the problems in any of these jurisdictions. There was, however, some support, though not as much as predicted, for the proposition that cities and counties chose retrenchment strategies with the least potential for political fallout. Somewhat unexpected was the strong propensity to select strategies that fragmented and reduced local government authority. Privatization and intergovernmental cooperative agreements were among the most popular retrenchment strategies.

### *Selection of Revenue Enhancement Strategies*

Resistance to increasing the property tax was not as strong as anticipated. Three jurisdictions increased millage rates (Houston, Youngstown, Allegheny County). In each case, property tax increases were linked to a specific popular goal — confirming the necessity of linking a benefit with requests for heavier taxation. For example, Allegheny County increased its property tax millage rates twice (5 mills, 3 mills), but minimized political resistance by emphasizing that the increases were necessary for economic revitalization and diversification of the Pittsburgh-area economy. Youngstown voters approved a bridge levy to replace or rehabilitate 33 bridges.

Efforts by state and/or local governments to eliminate taxing and spending limits and exemptions were unsuccessful, confirming taxpayers' continued preference for limited government. For example, after Proposition 13 was passed, California voters enacted Proposition 4, linking revenue growth to the consumer price index and population. Texas voters defeated a proposal to eliminate homestead exemptions. In Nevada, the state legislature imposed tax shift legislation in 1981, which effectively transferred dependence on the property tax to the sales tax (the sales tax in Clark County went from 3 cents to 5.75 cents). At the same time, the legislature imposed a spending cap that limited annual budget growth to 4.5 percent. The shift from a stable tax source (property) to an elastic tax (sales) would have worked if a recession had not occurred. "The expenditure cap, an unstable and unpredictable tax base, and less reliance on federal assistance made it necessary for Clark County to adjust spending priorities and find alternative revenue sources and innovative methods of financing."[6]

Efforts to increase state aid to local governments characterized all six jurisdictions, but only two jurisdictions (Newport News and San Diego) increased their reliance on state aid between 1978 and 1987 (see Table 1). California and Virginia suffered less of an economic decline than Pennsylvania, Ohio, Texas or Nevada over the decade, which explains those states' greater willingness to share.

None of these jurisdictions was in a state relaxing its restrictions on municipal use of income taxes. Neither Texas, Virginia, California, Pennsylvania, nor Nevada permits local income taxes. However, all but one jurisdiction (Allegheny County) were in states that permit local sales taxes. Where non-property taxes were already available for local government use, rates were increased (Ohio — income and sales; Texas, Virginia, California and Nevada — sales). Houston also renegotiated its franchise arrangements (telephone, cable television, taxis, pipelines, railroads, gas, electric), which produced $12 million in new revenue.

By far, the most popular revenue enhancement device was user fees. Houston hired professional consultants to review its user fee structure and to make recommendations about the adequacy of existing fees and the feasibility of new fees. The city generated several million dollars upon implementing these recommendations. The City of Newport News imposed new fees on emergency medical services, landfill disposal, recreational and cultural facilities, sewers, and development and construction permits, and it saved millions. Allegheny County increased a number of fees to represent full cost, as did Clark County and San Diego County (land use, air-pollution control and hazardous materials). Equity considerations were not identified as politically problematic in any of these jurisdictions, in spite of the heterogeneous nature of their constituencies (see Table 2).

Clark and San Diego counties used fee increases as the basis for strengthening enterprise fund (self-supporting) accounts. San Diego County created three new enterprise funds (airport, sanitation, solid waste). In our study, user charges and fees were generally more significant revenue producers among counties than cities (see Table 4).

Five of the six jurisdictions identified economic diversification as a major goal throughout the decade: Houston, Newport News, Youngstown, Allegheny County, and San Diego County. Houston stressed attracting high-tech industries. Newport News successfully emphasized attraction of foreign investors (Japan's Canon Copiers, Germany's Franz Windows and Switzerland's Grapha International). Emphasis on a strong infrastructure program (road, sewer, drainage, water systems) and public improvements, including landscaping and beautification, were part of Newport News' economic development strategy. Youngstown's diversification plan focused on nurturing small business. Youngstown used federal Community Development Block Grant (CDBG) funds and contracts with local banks to help create 95 small businesses, generating about 2,000 jobs and $40 million worth of private investments in the community. Allegheny County made a pitch for attracting service industries. In each jurisdiction, financial incentives were offered to entice new industries into the community. In most jurisdictions, fiscal breaks were also granted to existing, troubled industries.

Overall, there is little evidence to suggest that short election cycles prohibited implementation of economic development strategies, even though they did not immediately produce real revenue gains. In fact, such strategies often resulted in a loss of revenue through tax expenditures and mandated heavier spending for economic development staff, travel and promotional materials. The political fallout from expensive economic development efforts has been minimal in the short term. However, there is some speculation that this may change in the long term if studies reveal that job creation for *local* residents is minimal, but the tax burden is high.

**Table 3: Hypothesized Political Fallout from Retrenchment Strategies**

| Retrenchment Strategy | Political Constraints[1] | Legal Constraints[2] | Major Impact on Finance | |
|---|---|---|---|---|
| | | | Short-Term | Long-Term |
| **Revenue Enhancement** | | | | |
| Raising property tax | + | + | + | – |
| Imposing/raising user fees | – | – | + | – |
| Imposing/raising local government income tax | + | + | + | + |
| Imposing/raising local government sales taxes | – | + | + | + |
| Increasing state aid | – | – | + | – |
| Economic development — expansion & diversification of tax base | – | – | – | + |
| **Expenditure Reduction** | | | | |
| Personnel Reduction | + + | – | + | – |
| Delay/cancellation of capital improvements | – | – | + | – |
| Elimination of programs formerly funded by federal dollars | + | – | + | – |
| Greater productivity through use of improved management/ high-tech | – / + | – | – | + |
| Contracting out | – / + | – | + | + / – |
| Transferring of functions to other governments/private sector | – / + | + | + | + |
| Use of volunteers/private contributions | – | – | + | – |
| Reduction in non-basic non-mandated services | – | – | + | – |
| Cooperative agreements/pooling of purchases with other jurisdictions | – | – | + | + |
| **Borrowing** | | | | |
| Refinancing of debt | – | + | + | + |
| New borrowing through general obligation bonds | + | + | + | + |
| New borrowing through revenue bonds | – | – | + | + |

Note: [1] + means heavy political constraint; – means not a heavy political constraint; – / + means potential for both, depending on the structure of the plan

[2] + means heavy legal constraint; – means not a heavy legal constraint

*Selection of Expenditure Reduction Strategies*

"Divestiture" strategies prevailed among our six jurisdictions. Perhaps the most representative statement was made by the manager of San Diego County: "We have deferred, squeezed, retreated, slashed and privatized in every part of the budget."[7] The functions either contracted out or transferred by each jurisdiction were as followed:

**Houston, Texas**
- City bus company losing money under city management, transferred to a special district funded by a 1-cent local sales tax
- Wastewater treatment costs formerly funded under federal Environmental Protection Agency grants, transferred to private developer
- Tax appraisal function transferred to special appraisal district
- Collection of delinquent taxes contracted out
- Lab services for drug testing contracted out
- Custodial services contracted out
- Garbage pick-up, weed-cutting and landfill contracted out

**Newport News, Virginia**
- Commercial refuse collection for business and retail establishments contracted out
- Building security contracted out (city now pays $4.95 per hour for security personnel; previous rate was $7.00 per hour, plus benefits)
- Portion of custodial services contracted out

**Youngstown, Ohio**
- Garbage pick-up contracted out; saved millions of dollars; private company does better job with 17 people than city did with 50
- Street cleaning contracted out
- Fee and tax collection (from parking tickets to income tax) contracted out
- Legal services contracted out
- Housing inspections contracted out

**Allegheny County, Pennsylvania**
- Mental health / mental retardation services contracted out
- Adult services contracted out
- Federal programs contracted out
- Child, youth services contracted out

**Clark County, Nevada**
- County golf course leased to private corporation
- Management of animal shelter contracted to local veterinarian group
- Juvenile care and supervision contracted out to non-profits
- Home health care contracted out to local non-profits and agencies
- Engineering and consulting services contracted out

**San Diego County, California**
- Energy recovery plant contracted out
- Juvenile education services contracted out
- Institutional meal services contracted out
- Custodial and facility maintenance service contracted out
- Social services contracted out

Equally popular were *intergovernmental* coproduction agreements and joint economic development and planning activities:

**Houston**
- Street maintenance and construction: shared with Metropolitan Transit Authority
- Library services: shared with county and local university
- Wortham Performing Arts Center: shared with private contributors

**Newport News**
- Airport: shared with other local governments
- Tourism: city and three local jurisdictions (86 percent) and private sector (14 percent) formed Virginia Peninsula Tourism and Conference Bureau
- Regional sewer treatment facility: local governments
- Juvenile detention facility: other local governments
- Regional resource recovery system: local governments
- Virginia Peninsula Economic Development Council: local governments
- Transit (Pentran): city and City of Hampton; mass transit and specialized transit (ride sharing; vans for the handicapped)

**Youngstown**
- Rehabilitation of Public Housing Units: city and Youngstown Metropolitan Housing Authority (with CDBG money)
- Well child clinics, immunization program, mosquito control: City Health Department and Mahoning County General Health District
- Upgrading of Wastewater Treatment Plant: city and Mahoning and Trumbull counties (currently under negotiation)
- Youngstown Municipal Airport: city and two adjacent counties and their local governments (currently considering regionalization of airport)
- Prison Construction: city and Mahoning County (currently investigating joint funding)

**Allegheny County**
- Authority for Improvements in Municipalities: county loans bond money to municipalities for infrastructure and equipment
- Shared finance director: county and small local governments

- Allegheny League of Municipalities: all local governments
- Local government academy: courses offered for municipal officials and managers
- Urban Development Action Grant (UDAG) administration: county and small local governments
- CDBG funds: county and small local governments
- Joint purchasing: county and small local governments
- Pennsylvania Economy League: county and chief executive officers (CEOs) of major corporations

**Clark County**

- Regional flood control: local governments
- Leveraging of CDBG funds to small cities: Clark County and City of Las Vegas
- Economic Development Advisory Committee: local governments, Chamber of Commerce, Nevada Development Authority
- Wastewater treatment plant capacity expansion: county and City of Las Vegas
- Metropolitan Police: county and City of Las Vegas
- Computerized traffic control system: county and City of Las Vegas

**San Diego County**

- San Diego Association of Governments: all local governments; address local government funding problems and immigration issues
- Sewage: city, other local governments; Mexico; federal government
- Regional Judicial Council: local governments; address court and jail overcrowding issues
- Homeless persons: county working with other local governments and community agencies

From these examples, it appears that fiscal adversity forced the achievement of economies of scale in a number of areas, which, in inflationary periods, had been politically impossible.

Citizen coproduction, or volunteerism, was another popular way of maintaining low-priority services (leisure services, libraries) and services formerly heavily funded by federal dollars (social services). (In fact, no jurisdiction reported total abolition of programs due to federal cutbacks.) Newport News increased use of volunteers in its police department, libraries, parks and recreation programs, and schools. Citizen task forces were established to address specific areas such as human development, economic development and drug abuse. Clark County used volunteers in social services, hospital fund raising and committee liaison work. Clark County permitted Driving Under the Influence offenders to work off their sentences through custodial, clerical or public works duties. This produced savings in payroll and human resource costs. Inmate labor was also utilized by San Diego County, as were volunteers in a variety of service areas (700,000 hours of labor annually).

The necessity of reducing personnel costs produced a wide range of reactive strategies. Surprisingly, 66 percent (Houston, Newport News, Youngstown, Allegheny County) of our jurisdictions employed the more drastic measures: layoffs and firings. (See FTE figures in Table 2.) Typically, there was one round of heavy reductions in force — usually when the local private sector was doing the same. This timing effectively minimized the expected political fallout, even in the most heavily unionized, socioeconomically diverse jurisdictions (Youngstown, Allegheny County).

Less drastic personnel reduction cost-saving measures were across-the-board pay cuts (Houston); attrition (Houston, Clark County); classification restructuring, which permitted substituting civilians and sub-professionals for highly paid people (San Diego County); job-sharing, which enabled employees to continue working half-time (San Diego County); and hiring freezes (Houston, Allegheny County).

The more lucrative personnel reduction strategies dealt with employee benefits. Self-insurance programs were adopted in Clark County and Houston. Houston's chief financial officer estimated that the city saved more than $20 million in 30 months by adopting a self-insurance program for health, dental, life insurance and workers' compensation. Clark County found it cost effective to self-fund its liability insurance program. Houston also more aggressively managed its pension funds, eliminating $500 million of unfunded liability and reducing annual contributions by more than $10 million.

Restructuring of sick leave policies was another popular approach. In Houston, the elimination of unrestricted accumulations of sick leave with payoff at termination saved $148 million. San Diego County placed maximums on sick leave and vacation accrual. It also offered early retirement incentives (but affirmed that, while effective, they were expensive).

Getting employees to be more productive (a popular promise of politicians on the campaign trail) was a goal of all our jurisdictions. Performance-based pay raise policies were implemented by Newport News. According to the city's mayor, "Until 1980, Newport News' employee pay plan was based primarily on longevity. As a result of shrinking revenues and a demand for higher performance, the city implemented a totally performance-based pay plan whereby employee salary increases are granted only when an employee achieves and maintains a higher level of performance."[8] At the same time, the city created an employee assistance program to help supervisors and employees resolve poor performance situations that could result from personal or health problems. The city contracts with the Hampton-Newport News Community Services Board for counseling and intervention services, at a cost of $6.07 per employee. In the mayor's words: "The cost per employee has been minimal compared to the results we have realized from increased productivity."[9]

Clark County also established an employee assistance program, a management development program, a career development program and an employee courtesy program, all aimed at improving employee productivity and morale. Clark County is currently designing a new performance-based pay raise system. And performance, rather than seniority, has become the basis for layoffs in Houston under a new Civil Service policy.

One jurisdiction creatively linked personnel losses to capital equipment gains as a way of diffusing departmental conflict. Clark County's vacancy savings approach reallocated savings from the lag time between separation and the start of a new hire, a new hire coming in at a lower pay level in the classification or at a lower classification (underfill), and a vacant position to the next highest priority in the General Fund. For the past four years, these priorities have been in the area of departmental capital expenditures.

Saving money by using technology to improve employee efficiency was prevalent in all the jurisdictions. Personal-computer-based management systems improved efficiency in legal departments (Houston); financial management (Houston, Allegheny County); parking ticket operations (Newport News); public utility billing systems (Newport News); food stamps, Medicaid, public assistance, client assistance, and reporting (Newport News, San Diego County); emergency dispatching (Newport News); record retrieval in clerks' offices (Houston, Allegheny County); personnel and payroll (Allegheny County); purchasing (Allegheny County, Clark County); comprehensive planning (Clark County); zoning (Clark County); tax assessment (Clark County); and court services (Clark County, San Diego County). Interdepartmental computer networking was also a popular device for improving communication and financial management (Houston, Newport News, Clark County and San Diego County).

San Diego County was particularly reliant upon high-tech communications equipment and management systems to improve its efficiency. The jurisdiction purchased a countywide telephone system and a microwave communications system for its sheriff. The county also developed a program for linking the Board of Supervisors to the public via cable television and cut electricity costs by building cogeneration facilities.

Savings through better management of capital equipment purchases and maintenance occurred in 50 percent of the jurisdictions studied. For example, Houston purchased used vehicles and reduced its fleet size by decreasing the number of employees eligible to use a city vehicle. San Diego cut vehicle purchase costs by financing vehicles through banks, lease companies and non-profit corporations. Stringent maintenance requirements were imposed on departments by Clark County.

*Selection of Borrowing Strategies*

Traditional borrowing mechanisms — general obligation and revenue bonds — were used by all jurisdictions. In other words, there was no support for the hypothesis that revenue bonds were more popular than general obligation bonds during this period. General obligation and revenue bond issues were sold to the voters by linking them to popular improvements. For example, voters in Clark County approved an additional .25-cent sales tax for flood control and an additional 1-cent tax on motor vehicle fuel for road improvements. The Clark County manager also reported that: "Over the past few years, it has proven to be more politically viable and effective to group issues of lesser amounts into one large borrowing package which at minimum includes public safety or criminal justice programs [popular with the constituents]."[10]

But the greatest immediate savings in borrowing costs were realized through refinancing due to the drop in interest rates (Houston, Allegheny County, Clark County and San Diego County). For example, San Diego County reduced its interest rate costs from 8.8 percent to 6.9 percent, yielding an annual savings of approximately $500,000. Refinancing usually meant choosing variable,

### Table 4: Changes in Reliance on Three Major Own-Source Revenues, 1978 and 1987

| 1978: | | 1987: | |
|---|---|---|---|
| Source | Percent of Total Revenue | Source | Percent of Total Revenue |
| **Cities** | | | |
| Houston, Texas | | | |
| Property Taxes | 25.4 | Property Taxes | 27.0 |
| Water & Sewer | 19.3 | Water & Sewer | 21.8 |
| Sales Tax | 12.5 | Sales Tax | 11.0 |
| Newport News, Va. | | | |
| Property Taxes | 36.0 | Property Taxes | 35.0 |
| Sales Taxes | 4.0 | Sales Taxes | 4.0 |
| Utility Taxes | 3.0 | Utility Taxes | 3.0 |
| Youngstown, Ohio | | | |
| Income Taxes | 28.3 | Income Taxes | 38.4* |
| Miscellaneous | 21.3 | Current Charges | 11.4* |
| Property Taxes | 7.3 | Property Taxes | 6.0* |
| **Counties** | | | |
| Allegheny County, Pa. | | | |
| Property Taxes | 43.8 | Property Taxes | 51.6 |
| Aviation | 8.5 | Aviation | 8.0 |
| Fee Offices | 2.1 | Fee Offices | 2.6 |
| Clark County, Nev. | | | |
| Property Taxes | 24.0 | Property Taxes | 25.7 |
| Charges for Services | 16.3 | Sales Tax | 19.6** |
| Motor Vehicle Fuel Tax | 5.0 | Charges for Services | 17.5 |
| San Diego County, Calif. | | | |
| Property Tax | 24.2 | Property Tax | 20.8 |
| Charges & Fees | 6.9 | Charges & Fees | 9.2 |
| Other Local Interest & Sales Tax | 4.4 | Other Local Interest & Sales Tax | 6.4 |

Notes: *Youngstown figures are for FY 1985 — the latest available
**Newly authorized tax

rather than fixed, rate notes (Houston, Allegheny County). One jurisdiction (Clark County) was also able to take advantage of lower interest rates by pooling its borrowing through the Nevada State Bond Bank.

A number of different techniques were used by the counties to acquire capital equipment (not facilities). Clark County used capital leasing to "save money in the short run by permitting the county to acquire needed capital equipment at incremental costs, with the additional benefit of upgrading as appropriate under a lease arrangement."[11] Allegheny County issued short-term capital notes for major capital equipment purchases after it adopted a policy of no new long-term net debt. San Diego County created a non-profit corporation to finance equipment and capital improvements.

Getting more "bang for the bucks" was seen by all as a way of stretching borrowed dollars. Use of professional financial consultants was regarded as *essential* by Houston and Allegheny County. Professional financial advisors helped these jurisdictions improve their cash management and investment returns. They even helped Allegheny County improve its bond rating (Moody's had rated the city as Baa in 1978, whereas Standard & Poor's had awarded the county a AA rating, which saved in interest loss). In an innovative twist, Allegheny County invited bond-rating agency personnel to the county. As the county administrator described it:

> *We felt the bond rating agencies had a hard time conceptualizing what the Pittsburgh area was really like. So we decided to bring them to Pittsburgh rather than us going to New York. We showed them where an old steel mill was that is now a business park. We took them to our housing stock which has been termed "Hell with the lid taken off" and showed them that in fact the county was a nicer place than that and we had some nice housing stock in nice neighborhoods.*[12]

Advisors helped Clark County make decisions about whether competitive or negotiated bid arrangements for bond sales were the most fiscally advantageous to the county.

In summary, better management was stressed as an integral part of each retrenchment strategy — revenues, expenditures and borrowing.

## Summary

This longitudinal examination of retrenchment strategies adopted by big cities and big counties during a decade of fiscal decline has shown that they have *not* been indecisive or unable to act because of fear of political conflict and further fragmentation of authority. In fact, they have chosen a number of reactive strategies that previous studies identified as having great potential for heavy political fallout. Rather than fighting further fragmentation, local governments have supported it, especially when the perceived short-term effects were real savings of personnel and capital equipment.

We did find support for our hypothesis that local elected officials would select revenue strategies with the least expected political fallout (user fees, increased state aid, sales taxes and economic development). All of our jurisdictions imposed new, or raised old, user fees; 100 percent tried to increase state aid formulas, although not always successfully; and 83 percent tried to expand and diversify their tax bases through well-structured economic development policies. In all five jurisdictions where local sales options were in place, rates were raised.

The two revenue-raising strategies with the heaviest hypothesized political fallout (property tax increases, income tax utilization) were least often selected: property tax increases — three jurisdictions (50 percent); income tax — one jurisdiction (17 percent). Where used, however, these unpopular tax hikes were linked to high-priority programs and facilities.

The results supported our hypothesis that elected officials would find expedient those expenditure reduction strategies with the least expected political fallout: volunteerism, citizen coproduction, reduction in non-essential, low-priority services, minor cooperation with other local governments, and delay/cancellation of capital projects.

There also was support for the expectation that governmental officials would be attracted to strategies producing the best combination of monetary savings and low levels of political fallout: transferring functions to other local governments (totally or partially through cooperative agreements) or to the private sector; and contracting out. All the jurisdictions used these techniques, which yielded significant short-term savings. It appears that perceived short-term gains prevailed over concerns about long-term "fragmenting impacts."

Somewhat unexpected was the finding that few governments delayed or cancelled major capital purchases. Rather, they made creative borrowing arrangements (for example, leasing, cooperative efforts, bond sale pools and better management strategies to finance these purchases). The hesitancy to delay or cancel capital improvements suggests that local officials are *not* always willing to choose policies that *only* produce short-term savings, especially when the long-term fiscal consequences are known to be very negative.

All governments implemented productivity improvement programs featuring personnel and equipment (high-tech) to save in labor costs. The most unexpected finding was the degree to which severe personnel reduction strategies (firings, layoffs) were employed. Four (66 percent) of the jurisdictions, including the two most heavily unionized, chose these strategies. The findings suggest that the political fallout from such extreme policies is neutralized by identical trends in the community at large. This was the case in each of the four jurisdictions (Houston, Newport News, Youngstown and Allegheny County), in which the timing of extensive personnel reductions coincided with rising unemployment levels in the private sector.

Finally, there was not much evidence to suggest that short-term local election cycles within a period of consistent fiscal decline have produced "over time a series of small decrements in services and benefits — add[ing] up to a large scale deterioration in the quality of life of local inhabitants" (Levine, Rubin and Wolohojian, 1981b: 14). Only two jurisdictions (Houston, Youngstown) experienced a drop in their bond ratings between 1978 and 1987. Yet, all experienced significant decline in federal aid and most in state aid. The capacity of America's cities and counties to react to extreme fiscal adversity, even when the perceived political costs are high and further fragmentation of their authority is very likely, is a testimonial to Thomas Jefferson's faith in grassroots government.

## Notes

1. The federal share of local government revenue peaked in 1978 (Ellwood, 1982; Nathan and Doolittle, 1983; Bradbury and Ladd, 1985).
2. William P. Brown, Jr., March 30, 1987, tape of American Society for Public Administration (ASPA) panel, "Breaking the Habit: Big City and Big County Strategies to Cope with Less Dependence."
3. Size, economic base, loss of external aid and region were the factors used to select jurisdictions to be represented on the ASPA panel.
4. *1976 Income Tax*

Cities: Alabama, Delaware, Kentucky, Michigan, Missouri, New York, Ohio, Pennsylvania
Counties: Indiana, Kentucky, Maryland
School Districts: Iowa, Pennsylvania
Other: Pennsylvania
*1976 Sales Tax*
Counties: Florida, North Carolina, Wisconsin, Wyoming
Municipalities: Minnesota, Nebraska, North Dakota, South Dakota. The remaining states indicate totals only, as follows:
Municipalities and counties: Alabama, Arizona, Arkansas, Kansas, Missouri, Nevada, New Mexico, Oklahoma, Tennessee, Utah, Virginia, Washington
Municipalities and boroughs: Alaska
Municipalities, counties, and transit districts: California, Colorado, Georgia, Illinois, New York
Municipalities, parishes, and school districts: Louisiana
Counties and transit districts: Ohio
Municipalities and transit districts: Texas

5. *1985 Income Tax*

Cities: Alabama, Delaware, Kentucky, Michigan, Missouri, New York, Ohio, Pennsylvania
Counties: Indiana, Kentucky, Maryland
School Districts: Iowa, Ohio, Pennsylvania
Other: Pennsylvania
*1985 Sales Tax*
Counties: Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Illinois, Iowa, Kansas, Missouri, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Tennessee, Utah, Virginia, Washington, Wisconsin, Wyoming
Municipalities: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Idaho, Illinois, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, New Mexico, New York, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Utah, Virginia, Washington
Boroughs: Alaska
Transit districts: California, Colorado, Georgia, Illinois, Kentucky, New York, Ohio, Texas
Parishes: Louisiana
Special Districts: Louisiana

6. Pat Shalmy, March 30, 1987, tape of ASPA panel.
7. Norm Hickey, March 30, 1987, tape of ASPA panel.
8. Mayor Jessie Rattley, March 30, 1987, tape of ASPA panel.
9. *Ibid.*
10. Pat Shalmy, March 30, 1987, tape of ASPA panel.
11. *Ibid.*
12. Scott O'Donnell, March 30, 1987, tape of ASPA panel.

## Bibliography

Abrams, Jay H. (1982). "Local Government Finance: Realities and Directions," *Public Budgeting and Finance* 2 (Spring): 3-8.

Advisory Commission on Intergovernmental Relations (1985). *Intergovernmental Service Arrangements for Delivering Local Public Services Update 1983.* Washington, D.C.: ACIR, October.

Advisory Commission on Intergovernmental Relations (1986a). *Changing Public Attitudes on Governments and Taxes 1986.* Washington, D.C.: ACIR, S-15.

Advisory Commission on Intergovernmental Relations (1986b). *Significant Features of Fiscal Federalism 1985-86 Edition.* Washington, D.C.: ACIR.

Ammons, David N. (1984). *Municipal Productivity: A Comparison of Fourteen High-Quality Service Cities.* New York, N.Y.: Praeger.

Ammons, David N. and Joseph C. King (1983). "Productivity Improvement in Local Government: Its Place Among Competing Priorities," *Public Administration Review* 42 (March/April), 113-120.

Aronson, J. Richard and Eli Schwartz, eds. (1984). *Management Policies in Local Government Finance.* Washington, D.C.: Municipal Finance Officers Association and International City Management Association.

Behn, Robert D. (1985). "Cutback Budgeting," *Journal of Policy Analysis and Management* 4: 155-177.

Bennett, James T. and Manuel H. Johnson (1979). "Public Versus Private Provision of Collective Goods and Services: Garbage Collection Revisited," *Public Choice* 34: 55-63.

Biller, R. P. (1980). "Leadership Tactics for Retrenchment," *Public Administration Review* (November / December): 604-8.

Bjur, W. E. and Siegel, G. D. (1977). "Voluntary Citizen Participation in Local Government: Quality, Cost, and Commitment," *Midwest Review of Public Administration* 11 (June): 135-149.

Bowman, John H. (1981). "Urban Revenue Structures: An Overview of Patterns, Trends, and Issues," *Public Administration Review* 41 (Special Issue, January): 131-143.

Bozeman, Barry and Jeffrey D. Straussman (1982). "Shrinking Budgets and the Shrinkage of Budget Theory," *Public Administration Review* 42 (November / December): 509-515.

Browning, Rufus P., Dale Rogers Marshall and David H. Tabb (1984). *Protest Is Not Enough: The Struggle of Blacks and Hispanics for Equality in Urban Politics.* Berkeley: University of California Press.

Brudney, Jeffrey L. and Robert E. England (1980). "Public Attitudes Toward Community Services: Implications for Policy," *Midwest Review of Public Administration* 14 (September): 200-204.

Brudney, Jeffrey L. and Robert E. England (1983). "Toward a Definition of the Coproduction Concept," *Public Administration Review* 43 (January / February): 59-65.

Bryce, Herrington J., ed. (1980). *Managing Fiscal Retrenchment in Cities.* Columbus, Ohio: National Urban Policy Roundtable, Academy for Contemporary Problems.

Burchell, Robert W., James H. Carr, Richard L. Florida and James Németh (1984). *The New Reality of Municipal Finance: The Rise and Fall of the Intergovernmental City.* New Brunswick, N.J.: Rutgers, The State University of New Jersey, Center for Urban Policy Research.

Carr, James H., ed. (1984). *Crisis and Constraint in Municipal Finance: Local Fiscal Projects in a Period of Uncertainty.* New Brunswick, N.J.: Rutgers, The State University of New Jersey, Center for Urban Policy Research.

Chapman, Jeffrey I. (1987). *Long-Term Financial Planning: Creative Strategies for Local Government.* Washington, D.C.: International City Management Association.

Clark, Terry Nichols and Lorna Crowley Ferguson (1983). *City Money: Political Processes, Fiscal Strain, and Retrenchment.* New York, N.Y.: Columbia University Press.

Corporation for Economic Development (1987). *Economic Climate Project Report.* Washington, D.C.: CED.

Crosby, Ned, Janet M. Kelly and Paul Schaefer (1986). "Citizens' Panels: A New Approach to Citizen Participation," *Public Administration Review* 46 (March / April): 170-178.

Danziger, James N. and Peter Smith Ring (1982). "Fiscal Limitations: A Selective Review of Recent Research," *Public Administration Review* 42 (January / February): 47-56.

Davis, Charles E. and Jonathan P. West (1985). "Adopting Personnel Productivity Innovations in American Local Governments," *Policy Studies Review* 4 (February): 541-549.

DeHoog, Ruth Hoogland (1984). *Contracting Out for Human Services: Economic, Political and Organizational Perspectives.* Albany, N.Y.: State University of New York Press.

Downs, George W. and David M. Rocke (1984). "Theory of Budgetary Decisionmaking and Revenue Decline," *Policy Sciences* 16: 329-345.

Eastman, M. (1980). "Experiences of a County With Budget Trimming," in H. J. Bryce, ed., *Managing Fiscal Retrenchment in Cities.* Columbus, Ohio: National Urban Policy Roundtable, Academy for Contemporary Problems.

Edwards, Franklin R. and Barbara J. Stevens (1977). "Local Government Regulation of Residential Refuse Collection by Private Firms," In E. S. Savas, ed., *The Organization and Efficiency of Solid Waste Collection.* Lexington, Mass.: Lexington Books, 139-151.

Ellwood, John William, ed. (1982). *Reductions in U.S. Domestic Spending: How They Affect State and Local Governments.* New Brunswick, N.J.: Transaction Books.

Epstein, Paul D. (1984). *Using Performance Measurement in Local Government: A Guide to Improving Decisions, Performance, and Accountability.* New York, N.Y: Van Nostrand Reinhold Co.

Ferris, James and Elizabeth Graddy (1986). "Contracting Out: For What? With Whom?" *Public Administration Review* 46 (July / August): 332-344.

Ferris, James M. (1984). "Coprovision: Citizen Time and Money Donations in Public Service Provision," *Public Administration Review* 44 (July / August): 324-333.

Fisk, Donald, Herbert Kiesling and Thomas Muller (1978). *Private Provision of Public Services.* Washington, D.C.: The Urban Institute.

Fisk, Donald, Herbert Kiesling and Thomas Muller (1984). "Private Provision of Public Services: An Overview," in James H. Carr, ed., *Crisis and Constraint in Municipal Finance.* New Brunswick, N.J.: Rutgers, The State University of New Jersey, 243-251.

Florestano, Patricia S. (1981). "Revenue-Raising Limitations on Local Government: A Focus on Alternative Responses," *Public Administration Review* 41 (Special Issue, January): 122-131.

Florestano, Patricia S. and Stephen B. Gordon (1984). "A Survey of City and County Use of Private Contracting," in James H. Carr, ed., *Crisis and Constraint in Municipal Finance.* New Brunswick, N.J.: Rutgers, The State University of New Jersey, 252-263.

Fossett, James W. (1983). *Federal Aid to Big Cities: The Politics of Dependence.* Washington, D.C.: The Brookings Institution.

Gottdiener, Mark, ed. (1986). *Cities in Stress: A New Look at the Urban Crisis.* Beverly Hills, Calif.: Sage Publications.

Greene, Barbara P. (1987). "Counties and the Fiscal Challenges of the 1980s," *Intergovernmental Perspective* 13 (Winter): 14-19.

Greiner, J. and H. Hatry (1983). "Coping with Cutbacks: Agency Responses in 17 Local Governments," in L. E. Susskind and J. E. Serio, eds., *Proposition 2½: Its Impact on Massachusetts.* Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, 373-475.

Greiner, John M., Harry P. Hatry, M. P. Koss, A. P. Miller and J. P. Woodward (1981). *Productivity and Motivation: A Review of State and Local Government Initiatives.* Washington, D. C.: The Urban Institute.

Hamilton, Randy (1983). "The World Turned Upside Down: The Contemporary Revolution in State and Local Government Capital Financing," *Public Administration Review* 43 (January / February): 22-31.

Hanrahan, John (1977). *Government for $ale: Contracting-Out: The New Patronage.* Washington, D.C.: American Federation of State, County and Municipal Employees.

Harrell, Rhett D. (1986). *Banking Relations: A Guide for Government,* rev. ed. Chicago, Ill.: Government Finance Officers Association.

Hatry, Harry P. (1983). *Review of Private Approaches for Delivery of Public Services.* Washington, D.C.: The Urban Institute.

Hatry, Harry P. and Louis H. Blair (1976). "Citizen Surveys for Local Government," in Terry Nichols Clark, ed., *Citizen Preferences and Urban Public Policy.* Beverly Hills, Calif.: Sage Publications, 129-140.

Hatry, Harry P., Annie P. Millar and James H. Evans (1984). *Guide to Setting Priorities for Capital Investment.* Washington, D.C.: The Urban Institute Press.

Hatry, Harry P. and George E. Peterson, series eds. (1984). *Guides to Managing Urban Capital: A Summary.* Washington, D.C.: The Urban Institute Press.

Hatry, Harry P. and Bruce Steinthol (1984). *Guide to Selecting Maintenance Strategies for Capital Facilities.* Washington, D.C.: The Urban Institute Press.

Hawkins, Brett W. (1986). "Public Needs and Private Resources," *Transaction Social Science and Modern Society* 23 (September/October): 57-58.

Herbst, Anthony F. (1982). *Capital Budgeting: Theory, Quantitative Methods, and Applications.* New York, N.Y.: Harper & Row.

Holland, D. M. and P. L. McCarney (1983). "User Fees and Charges," in L. E. Susskind and J. F. Serio, eds., *Proposition 2½: Its Impact on Massachusetts.* Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, 81-103.

Howell, James M. and Charles F. Stamm (1979). *Urban Fiscal Stress: A Comparative Analysis of 66 U.S. Cities.* Lexington, Mass.: Lexington Books.

Kelley, Joseph T. (1984). *Costing Government Services: A Guide for Decision Making.* Chicago, Ill.: Government Finance Officers Association.

Kelso, William A. and Michael A. Maggiotto (1981). "Multiple Indications of Financial Instability in Local Governments," *International Journal of Public Administration* 3: 189-218.

Kirlin, John J. (1982). *The Political Economy of Fiscal Limits.* Lexington, Mass.: Lexington Books.

Ladd, Helen F. (1978). "An Economic Evaluation of State Limitations on Local Taxing and Spending Powers." *National Tax Journal* 31 (June): 1-18.

Levine, Charles H., symposium ed. (1978). "Organizational Decline and Cutback Management," *Public Administration Review* 38 (July/August): 315-357.

Levine, Charles H. (1979). "More on Cutback Management: Hard Questions for Hard Times," *Public Administration Review* 39 (March/April): 179-183.

Levine, Charles H., ed. (1980). *Managing Fiscal Stress: The Crisis in the Public Sector.* Chatham, N.J.: Chatham House Publishers, Inc.

Levine, Charles H. and Irene Rubin, eds. (1980). *Fiscal Stress and Public Policy.* Beverly Hills, Calif.: Sage Publications.

Levine, Charles H., Irene Rubin and George Wolohojian (1981a). "Resource Scarcity and the Reform Model: The Management of Retrenchment in Cincinnati and Oakland," *Public Administration Review* 41 (November/December): 619-628.

Levine, Charles H., Irene S. Rubin and George Wolohojian (1981b). *The Politics of Retrenchment: How Local Governments Manage Fiscal Stress.* Beverly Hills, Calif.: Sage Publications.

Lewis, C. and A. T. Logalbo (1980). "Cutback Principles and Practices: A Checklist for Managers," *Public Administration Review* 40 (March/April): 184-188.

Lowery, David (1983a). "Limitations on Taxing and Spending Powers: An Assessment of their Effectiveness," *Social Science Quarterly* 63 (June): 247-63.

Lowery, David (1983b). "The Hidden Impact of Fiscal Caps: Implications of the Beck Phenomenon," *Public Budgeting & Finance* 3 (Autumn): 19-32.

MacManus, Susan A. (1981). "The Impact of Functional Responsibility and State Legal Constraints on the 'Revenue-Debt' Packages of U.S. Central Cities." *International Journal of Public Administration* 3:67-111.

MacManus, Susan A. (1983a). "Changing Expenditure Patterns in American Cities During Periods of Fiscal Retrenchment: A Look at Shifts in Functional Priorities," paper presented at the annual meeting of the Southern Political Science Association, Birmingham, Ala., November.

MacManus, Susan A. (1983b). "State Government: The Overseer of Municipal Finance," in Alberta Sbragia, ed., *The Municipal Money Chase: The Politics of Local Government Finance.* Boulder, Colo.: Westview Press, 145-183.

MacManus, Susan A. (1984). "Introduction: Intergovernmental Dimensions of Urban Fiscal Stress," *Publius* 14 (Spring): 1-6.

MacManus, Susan A. (1985a). "Shifting to Block Grants: The Priorities of Urban Minorities," *Journal of Urban Affairs* 7 (Spring): 75-92.

MacManus, Susan A. (1985b). "Staying in the Game: The Reaction of Nonprofit Organizations to Federal Cutbacks," *Western Political Quarterly* 38 (December): 641-651.

MacManus, Susan A. (1986). "Using Federal Budget Cuts for Administrative Reform: CDBG Cutbacks in a City Marginally Dependent Upon Federal Funds," in Lewis Bender and James Stever, eds., *Administering the New Federalism.* Boulder, Colo.: Westview Press., 272-293.

MacManus, Susan A. (1987). *Local Government Reactions to Declining Revenues: A View Across the States.* Report prepared for the Ohio State and Local Government Commission. Cleveland, Ohio: College of Urban Affairs, Cleveland State University, February.

MacManus, Susan A. and Terry Nichols Clark, symposium eds. (1986). "Coping With Cutbacks," *Transaction Social Science and Modern Society* 23 (September/October): 48-64.

Malan, Roland M., James R. Fountain, Jr., Donald S. Arrowsmith and Robert L. Lockridge III (1984). *Performance Auditing in Local Government.* Chicago, Ill.: Government Finance Officers Association.

Marlin, John Tepper (1984). *Contracting Municipal Services: A Guide for Purchase from the Private Sector.* New York, N.Y.: John Wiley.

Marlowe, Julia (1985). "Private Versus Public Provision of Refuse Removal Service: Measures of Citizen Satisfaction," *Urban Affairs Quarterly* 20 (March): 355-363.

Martin, Joan K. (1982). *Urban Financial Stress: Why Cities Go Broke.* Boston, Mass.: Auburn House Publishing Company.

Matzer, John, Jr. (1983). *Capital Financing Strategies for Local Government.* Washington, D.C.: International City Management Association.

McCaffery, Jerry (1981). "Revenue Budgeting: Dade County Tries A Decremental Approach," *Public Administration Review* 41, Special Issue: 179-189.

McCarney, Patricia L. (1983). "Increasing Reliance on User Fees and Charges," in L. E. Susskind and J. F. Serio eds., *Proposition 2½: Its Impact on Massachusetts.* Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, 351-355.

McGowan, Robert P. and John M. Stevens (1983). "Local Government Initiatives in a Climate of Uncertainty," *Public Administration Review* 43 (March/April): 127-136.

McInturff, Patrick (1980). "Proposition 13: The Impact on the Inland Empire," San Bernardino, Calif.: Department of Public Administration, California State University.

Menchick, Mark D., Judith Fernandez and Michael Caggiano (1982). *How Fiscal Restraint Affects Spending and Services in Cities.* Santa Monica, Calif.: Rand Corporation.

Mikesell, John L. and C. Kurt Zorn (1986). "State Lotteries as Fiscal Savior or Fiscal Fraud: A Look at the Evidence," *Public Administration Review* 46 (July/August): 311-320.

Miller, Trudi C., ed. (1984). *Public Sector Performance: A Conceptual Turning Point.* Baltimore, Md.: The Johns Hopkins University Press.

Morgan, David R. and Robert E. England (1984). "State Aid to Cities: A Causal Inquiry," *Publius* 14 (Spring): 67-82.

Morley, Elaine (1986). *A Practitioner's Guide to Public Sector Improvement.* New York, N.Y.: Van Nostrand Reinhold Co.

Mushkin, Selma J., ed. (1972). *Public Prices for Public Products.* Washington, D.C.: The Urban Institute.

Mushkin, Selma J. and Vehorn, C. L. (1977). "User Fees and Charges." *Government Finance* 11: 42-48.

Nathan, Richard P., Fred C. Doolittle, and Associates (1983). *The Consequences of Cuts: The Effects of the Reagan Domestic Program on State and Local Governments.* Princeton, N.J.: Princeton Urban and Regional Research Center, Princeton University.

Pagano, Michael A. and Richard J. T. Moore (1985). *Cities and Fiscal Choices: A New Model of Urban Public Investment.* Durham, N.C.: Duke University Press.

Pammer, William J., Jr. and David R. Morgan (1985). "Dimensions of Retrenchment Strategies in Municipal Governments," paper presented at the annual meeting of the Southwest Political Science Association, Houston, Texas.

Pascal, Anthony, ed. (1984). *Exploring Benefit-Based Finance for Local Government Services: Must User Charges Harm the Disadvantaged?* Santa Monica, Calif.: The Rand Corporation.

Perry, James L. and Timlynn T. Babitsky (1986). "Comparative Performance in Urban Bus Transit: Assessing Privatization Strategies," *Public Administration Review* 46 (January/February): 57-66.

Petersen, John E. and Wesley C. Hough (1983). *Creative Capital Financing for State and Local Governments.* Washington, D.C.: Municipal Finance Officers Association.

Peterson, George E., Mary John Miller, Stephen R. Godwin and Carol Shapiro (1984). *Guide to Benchmarks of Urban Capital Condition.* Washington, D.C.: The Urban Institute Press.

Peterson, George E., Rita Bamberger, Nancy Humphrey and Kenneth M. Steil (1984). *Guide to Financing the Capital Budget and Maintenance Plan.* Washington, D.C.: The Urban Institute Press.

Peterson, Paul E. (1981). *City Limits.* Chicago, Ill.: The University of Chicago Press.

Poole, Robert W., Jr. (1980). *Cutting Back City Hall.* New York, N.Y.: Universe Books.

Rabin, Jack, W. Bartley Hildreth and Gerald J. Miller (1983). *Budget Management: A Reader in Local Government Financial Management.* Athens, Ga.: University of Georgia, Carl Vinson Institute of Government.

Rapp, Brian W. and Frank M. Patitucci (1977). *Managing Local Government for Improved Performance: A Practical Approach.* Boulder, Colo.: Westview Press.

Rich, R. D. (1977). "Equity and Institutional Design in Urban Service Delivery," *Urban Affairs Quarterly* 54 (March): 741-58.

Rich, R.D. (1980). "A Political Economy Approach to the Study of Neighborhood Organizations," *American Journal of Political Science* 24 (November): 559-92.

Rosener, Judy B. (1982). "Making Bureaucrats Responsive: A Study of the Impact of Citizen Participation and Staff Recommendations on Regulatory Decision Making." *Public Administration Review* 42 (July/August): 339-345.

Rubin, Irene S. (1982). *Running in the Red: The Political Dynamics of Urban Fiscal Stress.* Albany, N.Y.: State University of New York Press.

Savas, E. S. (1977). *The Organization and Efficiency of Solid Waste Collection.* Lexington, Mass.: Lexington Books.

Savas, E. S. (1980). "Policy Analysis for Local Government: Public vs. Private Refuse Collection," in Charles H. Levine, ed., *Managing Fiscal Stress: The Crisis in the Public Sector.* Chatham, N.J.: Chatham House, 281-302.

Savas, E. S. (1981). "Intracity Competition Between Public and Private Service Delivery," *Public Administration Review* 41 (January/February): 46-52.

Savas, E. S. (1982). *Privatizing the Public Sector: How to Shrink Government.* Chatham, N.J.: Chatham House.

Sbragia, Alberta M. (1983). "Politics, Local Government, and the Municipal Bond Market," in Alberta Sbragia, ed., *The Municipal Money Chase: The Politics of Local Government Finance.* Boulder, Colo.: Westview Press, 67-112.

Sears, David O. and John Citrin (1982). *Tax Revolt: Something for Nothing in California.* Cambridge, Mass.: Harvard University Press.

Sharp, Elaine B. (1980). "Toward a New Understanding of Urban Services and Citizen Participation: The Coproduction Concept," *Midwest Review of Public Administration* 14 (June): 105-18.

Sharp, Elaine B. (1986). "The Politics and Economics of the New City Debt," *American Political Science Review* 80 (December): 1271-1288.

Shefter, Martin (1985). *Political Crisis/Fiscal Crisis: The Collapse and Revival of New York City.* New York, N.Y.: Basic Books, Inc.

Snyder, Thomas P. and Michael A. Stegman (1986). *Paying for Growth: Using Development Fees to Finance Infrastructure.* Washington, D.C.: The Urban Land Institute.

Starling, Jay (1986). *Municipal Coping Strategies: As Soon As The Dust Settles.* Beverly Hills, Calif.: Sage Publications.

Stein, Robert M., Elizabeth G. Sinclair and Max Nieman (1986). "Local Government and Fiscal Stress: An Exploration into Spending and Public Employment Decisions," in M. Gottdiener, ed., *Cities in Stress: A New Look at the Urban Crisis.* Beverly Hills, Calif.: Sage Publications, 111-144.

Straussman, Jeffrey D. (1981). "More Bang for Fewer Bucks? Or How Local Governments Can Rediscover the Potentials (and Pitfalls) of the Market," *Public Administration Review* 41 (Special Issue): 150-157.

Straussman, Jeffrey D. and John Farie (1981). "Contracting for Social Services at the Local Level," *Urban Interest* 3 (Spring): 43-50.

Tufte, Edward R. (1978). *Political Control of the Economy.* Princeton, N.J.: Princeton University Press.

The Urban Institute (1980). *Performance Measurement: A Guide for Local Elected Officials.* Washington, D.C.: The Urban Institute Press.

Vogt, A. John and Lisa A. Cole (1983). *A Guide to Municipal Leasing.* Chicago, Ill.: Municipal Finance Officers Association.

Warren, Robert, Karen S. Harlow and Mark S. Rosentraub (1982). "Citizen Participation in the Production of Services: Methodological and Policy Issues in Coproduction Research," *The Southwestern Review* 2 (Summer): 41-55.

Warren, Robert, Mark S. Rosentraub and Karen S. Harlow (1984). "Coproduction, Equity, and the Distribution of Safety," *Urban Affairs Quarterly* 19 (June): 447-464.

Washnis, George J., ed. (1980). *Productivity Improvement Handbook for State and Local Government.* New York, N.Y.: John Wiley.

Weiss, Barbara, ed. (1985). *Public/Private Partnerships: Financing A Common Wealth.* Chicago, Ill.: Government Finance Officers Association.

Whitaker, G. P. (1980). "Coproduction: Citizen Participation in Service Delivery," *Public Administration Review* 40 (May/June): 240-6.

Wilson, L. A., II (1983). "Preference Revelation and Public Policy: Making Sense of Citizen Survey Data," *Public Administration Review* 43 (July/August): 335-342.

Wolman, Harold (1980). "Local Government Strategies to Cope With Fiscal Pressure," in Charles H. Levine and Irene Rubin, eds., *Fiscal Stress and Public Policy.* Beverly Hills, Calif.: Sage, 231-248.

# Toledo:

## An Economy Plagued by High Labor Costs and Loss of Manufacturing Facilities

*By Lawrence Connin, James P. Lesage and Michael Magura*

Our look at the Toledo economy focuses on the loss of employment over the last 10 years. We find two sources of lost jobs. First, plants and firms have closed their doors in Toledo by moving to other locations or going out of business. Second, existing firms have "downsized" their operations, including their labor forces. We provide detailed data on these two sources of employment decline for the Toledo economy, demonstrating that over the past 10 years plant closings accounted for 8,222 lost jobs, or 75 percent of the 10,900 manufacturing jobs lost, and that the downsizing of corporate headquarters operations accounted for another 9,600 fewer jobs. We also report some survey results that reflect the opinions of firms and entrepreneurs having left the Toledo economy. The survey, conducted by Dr. Larry Connin of the Urban Affairs Center at the University of Toledo, covered 30 manufacturing firms that had left Toledo or expanded their operations in locations other than the local area. It involved a personal interview with the major figure associated with the firm; the interview focused on such topics as changes in product markets, the influx of foreign goods, labor costs and labor productivity, major management decisions, the cost of operating in the Toledo area, and problems stemming from state and local government actions.

### Origins of the Job Loss

Toledo, with its rich manufacturing history, has come to be known as the "glass capital of the world," because of its two major glass-making firms, Owens-Illinois and Libbey Owens Ford, and a spin-off fiberglass manufacturer, Owens Corning Fiberglas. All three of these Fortune 500 firms have undergone dramatic employment cutbacks, takeovers or restructuring in the past two or three years — a trend occurring in many U.S. firms operating in mature domestic product markets. These three firms downsized operations in the Toledo area, resulting in a loss of 5,850 jobs since 1978.

Toledo also is referred to as "a little Detroit," because of its connection with the automotive industry housed 50 miles to the north. A group of Fortune 500 firms with headquarters in Toledo — Dana, Sheller Globe, Champion Spark Plug, Devilbiss and Dohler-Jarvis — operate as part of a network supplying the automotive industry. Their corporate headquarters have downsized, too, resulting in 3,950 fewer jobs in Toledo since 1978.

In addition to these firms, the Toledo metropolitan area houses manufacturing production facilities for Ford, General Motors, Chrysler and American Motors, with the smallest of these plants employing about 1,000 workers. Again we find downsizing, with employment reductions in the Ford and Chrysler facilities since 1978 accounting for a loss of 1,335 jobs. On the other hand, the GM plant has maintained its employment level of 4,800 over this period; the American Motors plant has increased employment from 5,952 in 1978 to 7,098 in 1986. Adding the 1,335 lost jobs and the 1,146 new jobs, we find a net loss of only 189 jobs in these production facilities. It should be noted, however, that the future of the American Motors facility in the Toledo area is uncertain given the proposed acquisition of the company by Chrysler.

In addition to the large production plants, many smaller firms in the area operate in the supply network of the automotive parts industry. Nationally, about 425,000 jobs have been lost in this industry since 1978; another 500,000 jobs are predicted to disappear by 1990, a trend that will have major implications for the Toledo economy.

As already mentioned, 8,222 manufacturing jobs were lost over the 1976-to-1986 period due to plant closings in the Toledo area. These jobs represented 75 percent of all manufacturing jobs lost in the area during this period.

### A Comparison With National Employment Trends

The questions we seek to address here are: Does the shifting of the Toledo employment pattern away from manufacturing merely reflect national trends; or, has the area lost more than its proportional share of manufacturing jobs, indicating a negative set of business factors that could hinder the creation and incubation of new jobs?

Table 1 shows the proportion of total employment in manufacturing for both the national and Toledo economies. It indicates that while Toledo traditionally has maintained about 6 percent more of its employment in manufacturing than the national economy, since 1979 and 1980 the figure has dropped to about 4-5 percent. View this another way: since 1976, manufacturing's share of

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national employment has dropped by 4. In Toledo, this share has dropped by 7.

### Table 1
### Share of Employment in Manufacturing

| Year | National Percent of Manufacturing Employment | Toledo Percent of Manufacturing Employment | Difference |
|---|---|---|---|
| '76 | 23.8% | 30.0% | 6.2 |
| 77 | 23.9 | 30.1 | 6.2 |
| 78 | 23.8 | 29.9 | 6.1 |
| 79 | 23.6 | 28.8 | 5.2 |
| 80 | 23.0 | 25.8 | 2.8 |
| 81 | 22.1 | 25.8 | 3.7 |
| 82 | 21.5 | 24.6 | 3.1 |
| 83 | 20.3 | 24.2 | 3.9 |
| 84 | 20.5 | 25.5 | 5.0 |
| 85 | 20.2 | 24.8 | 4.6 |
| 86 | 19.4 | 23.2 | 3.8 |

Table 2 shows an index of total and manufacturing employment levels for Toledo and the nation over the 1976-to-1986 period. The index is for the year 1976, meaning that index values above 1.0 represent a percentage growth in employment from the 1976 level, and index values less than 1.0 represent percentage declines in employment from the 1976 level. Using this interpretation, Table 2 shows that in 1986 total national employment grew 26.7 percent above its 1976 level, whereas total Toledo employment for this year was only 9.9 percent above the 1976 level. For manufacturing employment, the nation exhibited a higher-than-1976 level of employment in all years during the 1977-to-1986 period, with the exception of 1983. For Toledo, this was true for the years 1977 through 1979, but manufacturing employment fell as low as 80 percent of the 1976 level during the recession of 1982 and '83. Toledo manufacturing employment has not recovered more than 88 percent of the 1976 level and appears to be falling again in 1986 after the slight rise in 1984 and '85.

Our conclusion from this comparison with national trends seems to indicate that Toledo has lost more than its proportion of manufacturing jobs during the 1976-to-1986 period. This might be indicative of a poor business climate or an industrial mix heavily weighted toward the automotive industry.

## A Look at the Plant Closings

To set the stage for a discussion of the survey results, here are some annual summary data on plant closings in Toledo during the 1976-to-1986 period. As mentioned in the introduction, the source of manufacturing employment decline for the Toledo economy is plant closings, which account for 8,222 fewer jobs, or 75 percent of the 10,900 manufacturing jobs lost over the 1976-to-1986 period.

Table 3 shows numbers of plants closed, jobs lost, and firm births and deaths in the Toledo economy for the 1976-to-1986 period. Firm births and deaths were not available for the years 1985 and '86. The large number of jobs lost (3,095) in 1982 were primarily the result of the closing of a single plant, employing 2,500 workers, by Libbey Owens Ford.

### Table 2:
### Employment Indices for Toledo and the Nation

| Year | National index of total employment | Toledo index of total employment | National index of manufacturing employment | Toledo index of manufacturing employment |
|---|---|---|---|---|
| '76 | 1.000 | 1.000 | 1.000 | 1.000 |
| 77 | 1.028 | 1.032 | 1.030 | 1.036 |
| 78 | 1.078 | 1.066 | 1.077 | 1.065 |
| 79 | 1.132 | 1.080 | 1.123 | 1.038 |
| 80 | 1.159 | 1.035 | 1.117 | 0.891 |
| 81 | 1.161 | 1.023 | 1.078 | 0.883 |
| 82 | 1.154 | 0.984 | 1.043 | 0.808 |
| 83 | 1.134 | 0.987 | 0.964 | 0.800 |
| 84 | 1.181 | 1.035 | 1.019 | 0.869 |
| 85 | 1.230 | 1.065 | 1.041 | 0.881 |
| 86 | 1.267 | 1.099 | 1.032 | 0.853 |

Large production plants have always been important to the Toledo economy. In the 1920s, a single Willys plant employed 40 percent of the Toledo labor force. Today this plant operates as the American Motors facility, which employs 7,000 workers, or the equivalent of 2.5 percent of the area's employment, and is the largest private employer in Toledo. As mentioned, this plant's future is in doubt, creating a large amount of uncertainty about Toledo's economy.

### Table 3:
### Plant Closings and Jobs Lost

| Year | '76 | '77 | '78 | '79 | '80 | '81 | '82 | '83 | '84 | '85 | '86 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants Closed | 1 | 0 | 1 | 2 | 6 | 10 | 8 | 4 | 8 | 3 | 3 |
| Jobs Lost (due to plant closings) | 241 | 0 | 575 | 453 | 829 | 849 | 3095 | 395 | 915 | 455 | 415 |
| Firm Births | 825 | 711 | 700 | 744 | 745 | 872 | 718 | 796 | 950 | — | — |
| Firm Deaths | 709 | 655 | 671 | 620 | 551 | 688 | 717 | 696 | 734 | — | — |
| Net Business Formation | 116 | 56 | 29 | 124 | 194 | 184 | 1 | 100 | 216 | — | — |

## Survey Opinion and Toledo's Business Climate

In an effort to determine why firms have closed their plants or why they chose to move their operations from the Toledo area, Dr. Larry Connin conducted a series of personal interviews with both owners and managers of 30 former Toledo-area companies that have shut-down or relocated elsewhere in the last five or six years. These individuals were asked numerous questions about why they chose to discontinue operations in the Toledo area. The reasons given were varied, but common elements became evident.

Firms that were suppliers to the automobile industry represented approximately one-third of the manufacturing operations which recently have closed their plants in Toledo. Of those interviewed, about one-half were owners or managers of such supplier firms. Their responses indicated that they basically chose to close down operations in the Toledo area because of a price-cost squeeze: prices of parts supplied to the auto industry were falling because of foreign competition; and, high wages, rising benefits costs, and contributions to Ohio's workman's compensation fund kept their costs high or increasing. As Dr. Connin stated in his summary report:

> *A case in point is a long-time Toledo operation which recently closed its Toledo plant while maintaining a similar operation in a state in the Southeast. In Toledo they paid their top hourly workers roughly twelve dollars an hour in wages along with an additional seven dollars an hour in benefits. By contrast, they pay their employees in the South only five or six dollars an hour with a very minimum benefits package.*

Firms not related to the automobile industry made up the remaining half of the interviewed sample. Individuals from these firms stated that the primary reason for the closing of their Toledo operations was an inability to remain competitive. This was due, they said, to high labor costs, bad business decisions, changing market conditions, the high cost of utilities in Northwest Ohio, burdensome work rules, and the added administrative costs of unionization. Many firms stated that they were unable to maintain their customers because their competitors' costs were significantly lower and they were facing a shrinking market.

Although owners from both auto-related and non-auto-related firms pointed to labor costs as an important factor in their decisions to cease operations in the Toledo area, it should be noted that most of those interviewed believed that Toledo had a good labor force. They stated that Toledo workers were, in general, highly skilled and quite productive. However, because foreign competitors had much lower labor costs, they were forced either to move their operations to a lower-wage region in the United States or to discontinue their operations altogether.

The Connin report succinctly summarizes the causes for the plant closings in the Toledo area:

> *When companies close or leave town, it creates profound problems. There seems to be a general feeling of impotency and despair when the issue of plant closings in Toledo is raised. On one hand, companies shut down every day even in the best of times and in the best of business climates. And while it may sound harsh to say, some firms probably deserve to die. A small number of Toledo firms closed because of problems which were strictly local in nature, but for the most part the firms investigated did not close due to factors inherent in the Toledo business environment or to problems unique to this area. Those factors cited most often–high labor rates, declining productivity, burdensome work rules, and the impact of foreign competition–could be found throughout the industrial heartland of the Northeast and the Midwest. In many ways these problems are structural and national in scope and not created by local conditions alone.*

## Summary

It seems that Toledo is suffering many of the same problems brought about by a set of common factors affecting most cities of the industrial heartland. The future of Toledo's economy will most likely be shaped by the types of responses devised in other cities to deal with these common problems.

The extent of employment loss in the short term will depend on the ability of the city to maintain some of its large manufacturing production facilities. The long-term employment outlook is far less certain and will likely depend upon the speed with which labor and entreprenuers in the city adapt to the changing factors that have brought Toledo to its present condition.

As a final note: In attempting to define Toledo's current position in dealing with these problems relative to the other Ohio metropolitan areas that have been presented in the *Ohio Economic Trends Review,* Toledo seems to exhibit a less optimistic outlook than Dayton, but a slightly more optimistic outlook than Youngstown. The loss of one or more major manufacturing facilities would bring Toledo close to the depressed economic state of Youngstown. On the other hand, even if Toledo has the ability to retain these facilities in the short run, it has not put in place the base for further economic growth that Dayton has.

# Ohio Cities/Public Sector Liability: The Effects on Municipal Management

*By Gregory L. Wayt and Richard K. Ghere*

Recently, the escalating cost of liability insurance has emerged as a key management issue for local governments. In September 1986, seven Ohio municipalities—along with six other local governments—forced two insurance companies to renegotiate premium increases that ranged from 100 to 600 percent. This agreement was in response to a consent order by the Ohio Department of Insurance to pare back rate increases that exceeded state standards.[1] This article considers the effects of the present liability/insurance situation on municipal management. The data for this study were collected in a survey of fiscal officials in Ohio cities in the summer of 1986.

Some legal background,[2] especially with regard to sovereign immunity, provides an historical perspective on the liability situation facing Ohio cities. Sovereign immunity, the doctrine addressing governmental protection from litigation, has evolved from the common law tradition that "the king can do no wrong." Sovereign immunity in Ohio was established in an 1854 Supreme Court ruling that subdivisions are subject to tort liability* in proprietary functions (for example, enterprise functions), but are immune from such claims in the governmental realm. However, this long-standing doctrine was abolished by the state Supreme Court in 1982. In both *Haverlack v. Portage Homes* and *Enghauser Manufacturing v. City of Lebanon*, the court exercised its authority to abolish this judicially imposed doctrine. The court was explicit in reasoning that:

- individuals should have the right to make tort claims if injured as a result of governmental negligence; and
- the availability of insurance and other modern funding mechanisms could provide sufficient resources for payment of judgments.

While it granted continued protection for integral policy and management functions, the court clearly charged the Legislature with the task of defining specific areas of governmental immunity through statute.

The Ohio General Assembly responded by passing a sovereign immunity bill that was signed into law on November 15, 1985. This law essentially reinstates the doctrine of immunity in governmental (as opposed to proprietary) functions, but specifically excludes particular areas—such as negligent vehicle operation, failure to maintain highways and unsafe condition of premises (for example, city halls and court houses)—from protection. It is important to note that the *Enghauser* (and subsequent) decision(s) and the new law allow (that is, do not prevent) retroactive tort claims against local governments. Therefore, local jurisdictions can be held liable for prior claims relating to periods in which governmental indemnity was inadequate or even non-existent.

Nonetheless, it is unclear whether recent developments in state sovereign immunity have in fact precipitated the liability and insurance problems facing cities. Some attribute dramatic increases in litigation to the erosion of sovereign immunity. Others cite recent findings that the number of cases and value of awards in various types of tort actions have not increased sharply, but have simply kept pace with population growth.[3] These changes in sovereign immunity were coterminous with decreasing interest rates on investment from peak levels in the early 1980s. Therefore, it is conceivable that the insurance industry used the sovereign immunity issue as a pretext for rate increases that compensated for reductions in investment profits.

Also, it is questionable whether tort reform in Ohio would effectively offset the escalation of insurance premiums for local governments. In Decmeber 1986, the governor vetoed an insurance bill that was widely viewed as an industry concession, placing substantial limits on awards to injured parties. Proponents of that bill now hope of passing a modified version of the tort reform measure in the current legislative session. Generally, tort reform consists of some compromise between the insurance lobby, which seeks industry supports, and others who favor strengthening regulation of the industry. There are few guarantees that either reform component will be effective in rolling back liability premiums borne by local governments. In the state of Washington, for example, 175 insurance companies have requested additional rate hikes since tort reform was enacted in the spring of 1986. And there is concern that stricter regulation on rate-setting and policy-termination procedures—like those recently enacted by the Florida state legislature—will have the effect of driving insurers out of state markets.[4]

Notwithstanding the uncertainty surrounding these issues, the liability/insurance situation still persists as a significant management problem in Ohio cities. More than three-fourths of the 97 city officials responding to the survey[5] used in this study regard liability as a major threat to municipal management. The questionnaire solicited

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**Tort liability is liability for which a civil suit can be brought, arising from a wrongful act, damage or injury done willfully, negligently, or in circumstances involving strict liability, but not involving breach of contract.*

responses to three primary aspects of municipal liability: the severity of the problem; the consequences of the problem on policy-making and management activities; and the feasibility of proposed remedies. The survey elicited Likert-type responses, ranging from (1) "strongly disagree" to (5) "strongly agree."

## Severity of the Municipal Liability Issue

Several questions were included in this survey to ascertain key dimensions of insurance and liability issues as perceived by fiscal officials. The survey inquired if cities had sufficient cash reserves available to offset losses of, or reductions in, insurance coverage. Officials were also asked questions pertaining to whom they considered potential sources of litigious action—citizens, non-residents or employees. In response to another question, respondents compared the intensity of executive concern (that is, greater or lesser concern) to that expressed by council. Two further questions probed perceptions concerning the extent to which:

(a) service delivery has been altered due to a loss of insurance coverage; and

(b) new activities have been curtailed as a result of the liability situation.

Only 15 of the 97 respondents answered in the affirmative ("agreed"/"strongly agreed") to the question asking if sufficient reserves were available to offset losses of, or reductions in, insurance coverage.

Table 1 shows mean responses to the issue dimensions for subgroups relating to the respondent's position, form of city government and metropolitan status—along with correlations between these responses and city population. The correlations indicate the absence of linear relationships between population size and various perceptions of the liability situation. However, raw data distributions (not shown) indicate more frequent "agreed"/"strongly agreed" responses among officials of "middle-range" cities between 25,000 and 125,000 in population.

With regard to specific sources of litigious actions (such as citizens, non-residents, employees), a general pattern of relative severity is evident among most groupings. The exception among cities outside metropolitan areas can be explained in terms of externalities—for example, non-residents pose less of a threat outside standard metropolitan statistical areas (SMSAs) than within contiguous suburban settings. Although consistently low, the means for "employee threats" nonetheless exceed (except in one case) the midpoint of 3.00. It is particularly noteworthy that these perceptions by city managers (and those within manager governments) are strong, given the importance of the professional personnel function in manager settings. Conceivably, employees may be using litigious threats as tactics for addressing grievances against municipal employers.

Table 1 shows several means for respondent position groupings that are significantly higher/lower than the general distribution of responses. To some extent, these extreme responses may reflect "vested interest" in the magnitude of the liability problem (risk managers) or, alternatively, in the capability to deliver services effectively (safety service directors), notwithstanding the liability issue. Perhaps most revealing are perceptions of severity among elected auditors in statutory cities wherein financial management is fragmented among various elected and appointed officials. Conceivably, auditors feel particularly threatened by liability problems because they are held electorally accountable for fiscal "well-being" of the city but lack the authority to implement risk management procedures.

To what extent do variations exist between executive and councilmanic perceptions of insurance and liability issues? The means presented in Table 1 suggest that these variations are less likely among "manager" cities. Whether these responses indicate a heightened awareness of liability problems among council members in manager cities or simply close executive-council relationships in manager governments is open to question. With regard to service delivery, a comparison of subgroup means uncovers no significant patterns of respondent perceptions concerning the service impacts of the liability and insurance situation. Nonetheless, the relatively sizable standard deviations for all responses to the two questions concerning "adverse impacts" and "reluctance for new programs" indicate a substantial difference of opinion regarding the service consequences of insurance loss or reduction.

## Policy and Management Outcomes

Although it is premature to consider long-term effects, this survey does solicit information that identifies particular municipal responses to liability and insurance problems. Specifically, fiscal officials registered (dis)-agreement with three statements suggesting policy changes attributable to the liability situation (affecting budget procedures, causing cuts in capital improvements and spurring plans revision) and with the utility of three managerial practices (improved record-keeping, tightening administrative controls and developing a fixed-asset inventory program) in responding to these problems. Perhaps the least-known of these alternatives—fixed-asset inventories—involves careful monitoring of all city-owned assets exceeding a designated value. This information is helpful in assessing risks associated with equipment and facilities and in calculating replacement values for insurance purposes.

It is possible to study the management outcomes of the liability situation by assessing the attractiveness of the various risk management practices (identified above) in alleviating adverse effects of volatile insurance costs. Table 2 shows Spearman correlations between perceptions of adversity (drain on operating budget, reductions in service delivery and cuts in capital improvements) and the appeal for three risk management practices. It is assumed (based on open-ended responses) that strong positive correlations indicate either actual procedures "in place" or a viable managerial commitment toward implementing such a practice. Given inherent variations in administrative structure relating to form of government, Table 2 presents correlations for each of the three forms—manager, strong mayor and statutory. As expected, correlations (except in one case) are moderate to strong in manager cities. It appears that executives in these municipal settings value techniques associated with risk management as effective means of coping with adversities related to liability exposure. However, the strong correlations relating to respondents from statutory cities are noteworthy in view of the administrative fragmentation that inhibits effective financial management responses. Conceivably, the assumptions already stated—that strong responses indicate actual implementation or strong policy commitment—may fall short here. Alternatively, responses from these officials (for example, auditors) may simply stress the need for risk controls and procedures—even though the prospect of implementation is remote.

Finally, the correlations pertaining to strong mayor cities are noticeably weaker than those for manager or statutory settings. One possible interpretation here is that strong mayor organizations depend less on changes in managerial practices than on political responses in coping with external adversities than do manager structures. This explanation is supported by an open-ended question soliciting information about how the budget is cut in response to insurance loss or reduction. Five respondents from strong mayor governments commented that operating budgets were reduced "across the board," rather than targeted toward particular departments and programs. None of the officials from manager or statutory cities offered such information, but instead checked off particular program areas as budget reduction targets. This suggests that charter mayor governments approach uncertainty by

**Table 1: Dimensions of Liability Problem as Perceived by Fiscal Officers: Means of Responses Within Selected Subgrouping (Correlation with Population)**

(l = strongly disagree; 5 = strongly agree)

| | Threat of Litigation Initiated by... Residents | Non-Residents | Employees | Executive's Perception of Threat Greater than Council's* | Adverse Impacts on City Services* | Reluctance to Initiate New Services* |
|---|---|---|---|---|---|---|
| ALL RESPONDENTS | 3.82 | 3.70 | 3.44 | 3.58 | 2.84 | 3.30 |
| (s.d.) | (0.97) | (0.95) | (1.03) | (0.84) | (1.09) | (1.06) |
| **Position of Respondent** | | | | | | |
| Finance Director (34) | 3.67 | 3.44 | 3.26 | 3.70 | 2.85 | 3.21 |
| City Manager (16) | 3.88 | 3.75 | 3.62 | 3.00[a] | 2.88 | 3.31 |
| Mayor (10) | 3.80 | 3.80 | 3.50 | 3.60 | 3.00 | 3.00 |
| Service Director (7) | 3.00 | 3.14 | 2.42[b] | 3.57 | 2.57 | 3.43 |
| Auditor (8) | 4.37[c] | 4.25[d] | 4.13[e] | 3.37 | 2.75 | 3.63 |
| Risk Manager (4) | 4.50[f] | 4.50[g] | 4.50[h] | 4.00 | 2.75 | 3.50 |
| Others and NA (18) | — | — | — | — | — | — |
| **Form of Government** | | | | | | |
| City Manager (29) | 3.96 | 3.79 | 3.59 | 3.34 | 2.72 | 3.34 |
| Strong Mayor (39) | 3.71 | 3.54 | 3.33 | 3.72 | 2.87 | 3.18 |
| Statutory (29) | 3.82 | 3.82 | 3.45 | 3.55 | 2.89 | 3.41 |
| Metropolitan Status | | | | | | |
| SCSA/SMSA (77) | 3.84 | 3.76 | 3.42 | 3.53 | 2.79 | 3.30 |
| Non-SMSA (20) | 3.72 | 3.44 | 3.55 | 3.72 | 3.00 | 3.28 |
| **Population** (Spearman Corr.) | −.053 | .188 | .113 | .050 | .136 | −.066 |

a. $SD = 0.63$; $z = -3.565$; $p < .01$

b. $SD = 1.13$; $z = -2.211$; $p < .05$

c. $SD = 0.51$; $z = 2.853$; $p < .01$

d. $SD = 0.46$; $z = 3.163$; $p < .01$

e. $SD = 0.64$; $z = 2.852$; $p < .01$

f. $SD = 0.57$; $z = 2.066$; $p < .05$

g. $SD = 0.57$; $z = 2.341$; $p < .05$

h. $SD = 0.57$; $z = 3.221$; $p < .01$

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*Ratings indicate agreement with statement as prepared in questionnaire placing a somewhat stronger emphasis on political strategies than on managerial techniques in coping with liability problems.

## Remedies for Municipal Liability

The survey also measures how receptive Ohio city officials are to various innovative approaches in dealing with risk and insurance problems. One strategy involves developing internal capabilities for coping with a volatile insurance situation by implementing a comprehensive risk management program. Such an undertaking usually requires the municipality to hire a risk manager to:

- assess the liability exposure of various operations of city government; and
- implement risk management procedures such as those discussed above.

Alternatively, city officials can seek assistance outside municipal government. For example, the ultimate responsibility of state government toward its subjurisdictions can be construed as an implied obligation of the state to provide local governments assistance in extreme situations. Another external approach involves participation in an insurance consortium that pools risk among many local governments. Consortia have been established in several states under the auspices of state municipal leagues.[6] Generally, the consortium concept involves pooling risk for large claims among participants who retain responsibility for smaller judgments—much like a deductible clause in personal insurance. At issue in determining the feasibility of consortium participation is the extent to which policy-makers are willing to: risk underwriting protection for other cities; and lose municipal autonomy as a result of consortium stipulations and investment requirements.

The survey asked officials to evaluate the feasibility of a risk management program, given the current availability of resources in their municipalities. In addition, these officials registered opinions concerning the extent of the state's obligation to assist cities in coping with liability problems, the desirability of a consortium if it were sponsored by the Ohio Municipal League, and the willingness of council to participate in such a consortium.

In Table 3, the relatively low statistical means related to feasibility of risk management—in comparison with the external remedies—suggest that city officials have some reservations about risk management as a strategy for dealing with liability uncertainty. A few open-ended responses expressed doubt concerning the resource capability of (their) cities to commit to a comprehensive program. Means relating to the perceived obligation of the state and the desirability of insurance consortia are discernibly higher than those for risk management. With regard to the state, it is not surprising that mayors and auditors (most of whom serve in statutory cities) are especially inclined to hold the state accountable for assistance in coping with the insurance situation. The municipal autonomy issue may be less salient in statutory cities than in charter governments.

Generally, mean responses for overall desirability and willingness to participate in consortia are considerably higher than reactions to the risk management alternative. The consortium option has particular appeal among city managers, who perhaps maintain closer professional ties to the Ohio Municipal League than do other officials. Nonetheless, some officials offered open-ended responses that stipulated circumstances by which their cities might participate in a consortium. Some of these comments suggest that officials are hesitant to make long-term commitments in responding to a problem not well-understood (perhaps temporary insurance costs merely reflect temporary market aberrations). However, a substantial number of officials surveyed do agree in principle that: the state bears responsibility for the insurance problems of Ohio cities; and the municipal league is an appropriate vehicle for administering a pooled insurance fund.

## Summary

Currently, there is much confusion concerning the nature of, and the prognosis for, the liability situation facing Ohio municipalities. Some observers dismiss the liabilty "crisis" as a creation of the media, while others view it as a long-term problem. Although the survey does not provide definitive answers to these questions, it does identify some current dimensions of the liability situation affecting Ohio municipalities.

The study results indicate that the liability and indemnification issue is viewed as a critical one in many Ohio municipalities. Yet it appears that city governments adopt varying approaches in coping with insurance loss and liability exposure. For example, the data show that manager municipalities tend to favor administrative procedures as a means to minimize liability exposure. In contrast, strong mayor governments are more inclined to adopt political strategies, such as "across the board" budget reductions,[7] in responding to rising insurance costs. Furthermore, fiscal officers in statutory cities appear particularly sensitive to the need for managerial and programmatic remedies for insurance volitility, notwithstanding questions of structural capability to implement such measures.

Lastly, the findings suggest that municipal officials in Ohio have some reservations about the feasibility of comprehensive risk management programs. In contrast, these respondents show greater receptivity toward the possibility of participation in risk-pooling consortia, such as those established by some state municipal leagues.

## Table 2: Spearman Correlations of Various Impacts of Liability Situation With Respondent Preferences for Risk-Management Techniques (by form of municipal government)

| | BUDGET EFFECTS OF LIABILITY SITUATION | | | SERVICE EFFECTS OF LIABILITY SITUATION | | | CUTS IN CAPITAL IMPROVEMENTS DUE TO LIABILITY SITUATION | | |
|---|---|---|---|---|---|---|---|---|---|
| | CM$^{a}$ | SM | St | CM | SM | St | CM | SM | St |
| Improved Record-Keeping Procedures | .416$^{*}$ | .456$^{**}$ | .463$^{**}$ | .607$^{***}$ | .467$^{**}$ | .440$^{*}$ | .462$^{**}$ | .324 | .315 |
| Tighter Administrative Controls | .456$^{*}$ | .357$^{*}$ | .478$^{**}$ | .439$^{*}$ | .254 | .598$^{***}$ | .545$^{***}$ | .120 | .598$^{***}$ |
| Fixed Assets Inventory | .294 | .358$^{*}$ | .506$^{**}$ | .481$^{**}$ | .308 | .252 | .406$^{*}$ | .032 | .322 |

a Abbreviations: CM = Charter Manager (29); SM = Strong Mayor—charter (39)
St = Statutory—non-charter (29)

$^{*}p < .05$
$^{**}p < .01$
$^{***}p < .001$

## Table 3: Respondent Ratings of Feasible Remedies for Liability Problem; Means for Subgroups According to Position and Form of Government

| | INTERNAL | EXTERNAL | | |
|---|---|---|---|---|
| | Risk-Management Feasible (given current resources) | State Is Obligated to Assist | OML Program Assistance is Desireable | Council Will Participate in Consortium |
| ALL RESPONDENTS | 3.25 | 3.65 | 3.79 | 3.58 |
| (s.d.) | (0.97) | (1.16) | (0.87) | (0.84) |
| **Position of Respondent** | | | | |
| Finance Director (34) | 3.29 | 3.71 | 3.70 | 3.47 |
| City Manager (16) | 3.19 | 3.56 | 4.19$^{a}$ | 3.69 |
| Mayor (10) | 3.00 | 3.90 | 3.70 | 3.80 |
| Service Director (7) | 3.43 | 3.57 | 3.71 | 3.71 |
| Auditor (8) | 2.63$^{b}$ | 3.87 | 4.00 | 3.75 |
| Risk Manager (4) | 3.00 | 3.00 | 3.00 | 3.00 |
| Others and NA (18) | — | — | — | — |
| **Form of Government** | | | | |
| City Manager (29) | 3.07 | 3.69 | 4.10$^{c}$ | 3.62 |
| Strong Mayor (39) | 3.41 | 3.45 | 3.63 | 3.45 |
| Statutory (29) | 3.21 | 3.90 | 3.90 | 3.70 |

a. $SD = 0.75$; $z = 2.065$; $p < .05$
b. $SD = 0.74$; $z = -2.167$; $p < .05$
c. $SD = 0.75$; $z = 2.278$; $p < .05$

**Footnotes**

1. See Richard Ellers, "Two Insurers Pare Rate Hikes, Agree to Pay Ohio $90,000," *Cleveland Plain Dealer* (September 16, 1986), 1A. Complaints were filed by counties of Trumbull, Summit, Seneca and Henry; cities of Athens, Norwood, Niles, Beachwood, Findlay and Martins Ferry; the village of Columbus Grove; and Madison Township in Summit County.
2. See Carol A. Lanyi, "The Rule is Liability—The Exception Is Immunity—*Enghauser Manufacturing Co. v. Eriksson Engineering Ltd." University of Dayton Law Review* 9(2) (Winter, 1984), 327-337. Lanyi points out the distinction between the court's interpretations in *Haverlack* and in *Enghauser*. She argues that confusion existed with regard to "fact-specific" language in *Haverlack* (that is, whether the decision was limited to the operation of sewage plants—the issue of negligence in question). In *Enghauser*, it became clear that a range of governmental as well as proprietary management functions was no longer protected.
3. Often cited are statistics compiled both by Jury Verdict Research, Inc., (Solon, Ohio) and the National Association of State Courts.
4. See Deborah Kasouf, "Insurance Reform Bill Mandates Lower Rates," *Public Administration Times* 9(13) (July 1, 1986), 1.
5. Questionnaires were sent to 175 Ohio cities with populations of 5,000 or more. Respondents serve in various top management positions. As indicated below, most respondents represent cities in the 10,000 to 50,000 population range and in SMSAs:

| | Population (thousands) | | | | | Metro Status | | |
|---|---|---|---|---|---|---|---|---|
| | 0-10 | 10-25 | 25-50 | 50-125 | 125- | SMSA | Non-SMSA | Total |
| Finance Director | 4 | 21 | 4 | 0 | 1 | 27 | 3 | 30 |
| — Assistant | 0 | 2 | 2 | 0 | 0 | 4 | 0 | 4 |
| City Manager | 3 | 8 | 1 | 2 | 0 | 11 | 3 | 14 |
| -Assistant | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 |
| Mayor | 2 | 6 | 2 | 0 | 0 | 6 | 4 | 10 |
| Service Director | 0 | 5 | 1 | 1 | 0 | 4 | 3 | 7 |
| Auditor | 1 | 4 | 2 | 1 | 0 | 6 | 2 | 8 |
| Risk Manager | 0 | 1 | 0 | 1 | 2 | 4 | 0 | 4 |
| Other Administration | 1 | 7 | 4 | 1 | 0 | 10 | 3 | 13 |
| (not available) | 0 | 2 | 2 | 0 | 1 | 4 | 1 | 5 |
| | | | | | | | | 97 |

In subsequent analyses, "assistants" are included within the finance director and city manager classifications.

6. See Georgina Fiodalisi, "Cities Bond Together to Create Insurance," *City and State* 3(6) (June, 1986) 1.
7. This inference is based upon responses as to how high insurance costs have affected the delivery of particular services: recreation, public safety, maintenance, volunteer-oriented activities, or "other" (an open-ended category). Percentages for form of government groupings are as follows:

| | Recreation | Public Safety | Maintenance | Volunteer-Oriented Activities | Other |
|---|---|---|---|---|---|
| Charter Manager | 60% | 50% | 40% | 30% | 0% |
| Charter Mayor | 56% | 44% | 11% | 33% | 17% |
| Statutory | 67% | 8% | 8% | 42% | 0% |

Each open-ended ("other") response indicated that all or many services were affected.

# A Source for Wealth and Job Creation:

## The Manufacturing Headquarters Path to Development In the Cleveland-Akron Region

*By Timothy K. Kinsella*

Historically, the Northeast and North Central portions of the nation built their reputations on the strength of heavy manufacturing industries. Highly labor-intensive production operations, which required a large blue-collar work force, were performed in factory settings.[1]

Today, a major economic transition is under way. Manufacturing firms are decentralizing their production operations to low-cost areas around the nation and globe. Larger firms continue to out-source production to distant, smaller firms. Jobs are automated through technological advance. These actions result in factory closings and a decline in the blue-collar employment base of traditional manufacturing cities within mature industrial regions (Miller, 1979; Bluestone, Harrison and Baker, 1981; Bluestone and Harrison, 1982).

Despite apparent decline, some of these cities are developing a new distinctive competence. Manufacturing remains the strength of their economies, but new operations have grown and evolved within the manufacturing firm. Routinized production has given way to "knowledge-based" activity, especially resource-allocation decision-making. This emphasis on the systematic acquisition, organization and use of information is critical in managing the processes of production and distribution of goods around the nation and globe.[2] It is performed within headquarters of manufacturing firms, which also contract out to information providers in advanced business services, such as law, accounting and engineering.

The purpose of this research, therefore, is to examine the manufacturing headquarters path to development with its emphasis on knowledge-based activity. Focus is on one geographic area: the Cleveland-Akron region. It is the classic example of a heavy manufacturing center that has suffered blue-collar employment decline. However, it is argued here that the region is developing a niche as a manufacturing headquarters center.

Knowledge-based activity performed within headquarters and related advanced services represents a critical factor of production in the manufacturing process. It is an important generator of wealth and jobs at a time when the region is losing its historical routinized manufacturing strength. This new opportunity should be of interest to economic development practitioners.

Authors have identified the growing importance of the headquarters path to wealth and job creation in advanced stages of economic development. They have noted central administration office (CAO) and related advanced services growth within firms and cities (Stanback, 1981; Noyelle and Stanback, 1983; Noyelle, 1985). These activities provide a wide range of knowledge expertise that enable firms to remain competitive in national and global economies (Knight, 1982; Knight and Gappert, 1984). They complement production work by managing, planning and developing manufacturing resources (Noyelle, 1985).

Other authors have measured decision-making power concentrated in regions as a result of the presence of large-scale manufacturing firms. Allan Pred (1974, 1977), for example, examined the extent to which "growth-determining" decision-making power was dispersed among large metropolitan complexes. Pred used worldwide employment directed by *Fortune* 500 firms headquartered in regions as his primary measure. He found that decision-making power was concentrated in large centers, resulting in a spatial bias of information. Wilbur Thompson (1985) also utilized worldwide employment of *Fortune* firms to examine the concentration of "resource-allocation" decision-making power for the largest 72 metropolitan areas.

Other authors have studied changes in the level of headquarter or office activity within cities. Armstrong (1972) examined changing shares of CAO employment. Manners (1974) studied floor space and new office construction. Burns and Pang (1977) examined the share of *Fortune* 500 firms remaining in once dominant headquarter cities. Quante (1976) examined the exodus of large-scale firms headquartered in New York City, utilizing a variety of measurements such as firm type and numbers, mergers and acquisitions. Semple (1973) studied the decline in the share of sales controlled by large-scale firms in regions due to departures. Green and others focused on investment of capital by firms in the largest metropolitan areas and their increasing control of assets (1972).

The research presented in this article builds on the work of these authors. It examines the manufacturing headquarters path to development in the Cleveland-Akron region, which consists of the Cleveland primary metropolitan statistical area (PMSA) (Cuyahoga, Lake, Medina and Geauga counties) and the Akron PMSA (Portage and Summit counties). The region is examined as a whole; the two PMSA's are looked at separately.

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While part of the same manufacturing region undergoing rapid change, these PMSA's possess different economic characteristics. Both are concentrated in manufacturing; Akron, however, is dominated by headquarters in the tire-and-rubber industry. Firms based in the Cleveland PMSA represent a more diverse manufacturing industry mix.

The strength of the headquarters path is examined from three perspectives. The first is CAO activity within manufacturing. This activity includes management and policy formation, product and marketing orientation, engineering and quality control, record-keeping and accounting, design of work flow, and arrangements for shipment of outputs. It includes occupations such as administrative and managerial, office and clerical, research and development, and electronic data processing (U.S. Department of Commerce, 1986). CAO, by definition, represents a good indicator for headquarters activity.

The second perspective focuses on manufacturing firms headquartered in the region and the resulting concentration of decision-making power. The *Fortune* Directory of First and Second 500 manufacturing firms is a primary data source. This directory ranks firms by sales and includes other dimensions of activity such as worldwide employment and assets. Smaller manufacturing firms headquartered here, privately-held firms, and divisions also are identified by using other directories, such as those in *Crain's Cleveland Business*, to determine manufacturing headquarters strength.

The third perspective is business and professional services activity in the region that supports manufacturing headquarters operations. These advanced services firms supply needed information to firms headquartered here. Therefore, they represent an important part of the headquarters path.

These perspectives are explored in each of the following three sections. The final section of the article will provide a summary of findings and conclusions regarding the region's position as a manufacturing headquarters center.

## CAO Activity in the Region

The purpose of this section is to examine CAO activity within manufacturing for the Cleveland-Akron region. It begins with a discussion of trends in manufacturing and production work. CAO activity is placed into this broader context. Areas of interest include employment and payroll changes over time.

Since 1972, manufacturing employment in the region has declined by 23.2 percent, to approximately 280,000. A total of 84,494 manufacturing jobs were lost. The nation held steady at 19.0 million (Ohio Bureau of Employment Services, 1972; 1984).

Historically, production employment has represented the primary part of manufacturing. It includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping, maintenance, repair and other services associated with production operations (U.S. Department of Commerce, 1986). However, production employment also has declined in recent years. It comprised 66.7 percent of the region's manufacturing employment in 1967, as compared with 56.9 percent in 1982 (U.S. Department of Commerce, 1985; 1986).

In the Cleveland PMSA, the production employment share fell from 68.4 percent to 59.0 percent, and in the Akron PMSA from 61.3 percent to 50.4 percent, even while manufacturing employment was declining in absolute numbers. (See Figure 1.)

However, evidence indicates an increase in headquarters activity within manufacturing. That is, CAO employment became more dominant during this time period. It increased by 54.7 percent in the region between 1967 and 1982, from 27,400 to 42,400 (U.S. Department of Commerce, 1985). In 1982, the region ranked seventh in absolute CAO employment, following the New York SCSA, 208,500; Detroit, 95,000; Chicago, 76,100; Philadelphia, 64,200; Los Angeles, 46,800; and San Francisco, 44,300 (U.S. Department of Commerce, 1986).

CAO employment improved by 58.6 percent (from 18,600 to 29,500) in the Cleveland PMSA and by 46.6 percent (8,800 to 12,900) in the Akron PMSA. The nation, meanwhile, gained by 53.6 percent (U.S. Department of Commerce, 1985; 1986). (See Figure 2.)

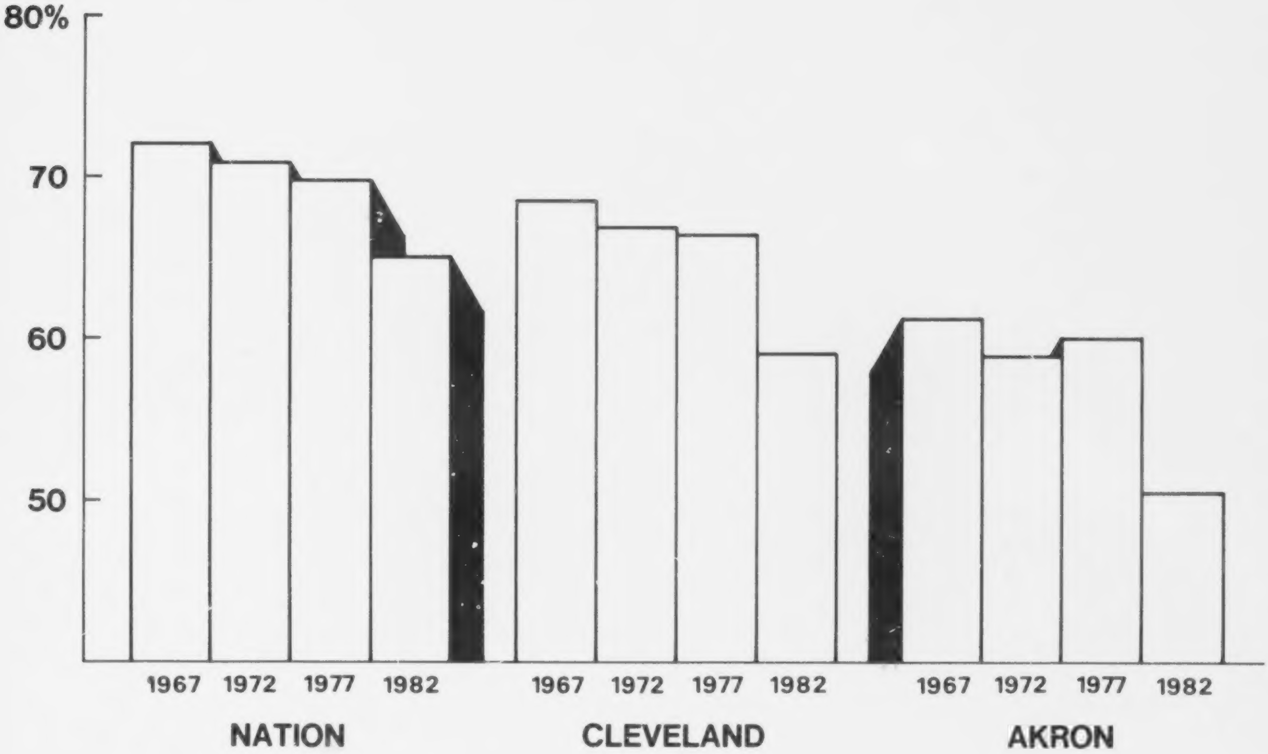
CAO share of total manufacturing increased in the region from 6.7 percent in 1967 to 14.4 percent by 1982. This share increased from 6.1 percent to 13.2 percent in Cleveland, and from 8.7 percent to 18.1 percent in Akron. (See Figure 3.)

Research by Wilbur and Philip Thompson (1985, College of Urban Affairs, Cleveland State University) ranks the Cleveland PMSA seventh in share of CAO to manufacturing employment for all metropolitan areas with at least 1,000,000 population; it follows Detroit, Pittsburgh, Minneapolis-St. Paul, New York and Columbus. The Akron PMSA ranks first for metropolitan areas between 500,000 and 1,000,000, and third overall.

In summary, CAO employment growth for the region kept pace with the nation, while total manufacturing employment underwent steady decline. Moreover, the CAO to total manufacturing employment share in the region increased over time, at a rate more pronounced than that of the nation, even though the region started with a higher CAO share. This, however, is largely explained by the fact that national production employment within manufacturing held relatively steady, while the region faced strong production employment decline.

Evidence, therefore, indicates that additional CAO employment and increasing CAO intensity accompanied production-worker decline within manufacturing. This trend is a sign of the increasing extent to which the region continues to evolve along the headquarters path within

**Figure 1**
**Share of Production to Manufacturing Employment**



manufacturing.

CAO strength also can be examined from a payroll perspective.[3] Payroll totals ($1982*) for CAO activity in the region increased by 83.2 percent between 1967 and 1982 — that is, from $701.5 million to $1.3 billion (U.S. Department of Commerce, 1985).

CAO payroll increased by 67.3 percent in the Cleveland PMSA, to $824.4 million, and by 120.9 percent in Akron, to $460.8 million. Meanwhile, the nation gained by 73.0 percent, from $22.0 billion to $38.2 billion. (See Figure 4.)

The share of CAO to total manufacturing payroll in the region also increased, from 8.6 percent to 19.1 percent, during this time period. Therefore, almost one-fifth of the manufacturing payroll went for CAO activity. That for the nation increased from 6.6 percent to 10.1 percent.

By 1982, CAO payroll per employee for the region was $30,311; for the nation it was $29,953. This compares with regional production payroll per employee of $19,528. Therefore, it takes 15.5 production workers to earn the equivalent of 10 CAO workers, which include clerical staff.

In summary, CAO payroll in the region increased at a rate slightly greater than that of the nation. This payroll increase exceeded that of regional CAO employment growth (83.2 percent to 54.7 percent), indicating rising

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**Payroll figures are adjusted to 1982 dollars utilizing personal consumption expenditures. See Notes for more information.*

payroll-per-employee levels. These levels exceeded those of production workers. In addition, the CAO to total manufacturing share increased at a rate more pronounced than that of the nation, due both to faster regional CAO payroll growth and rapid production-worker decline. These findings underline the region's evolution along the manufacturing headquarters path to development, given the fact that central administration is a primary component of headquarters activity.

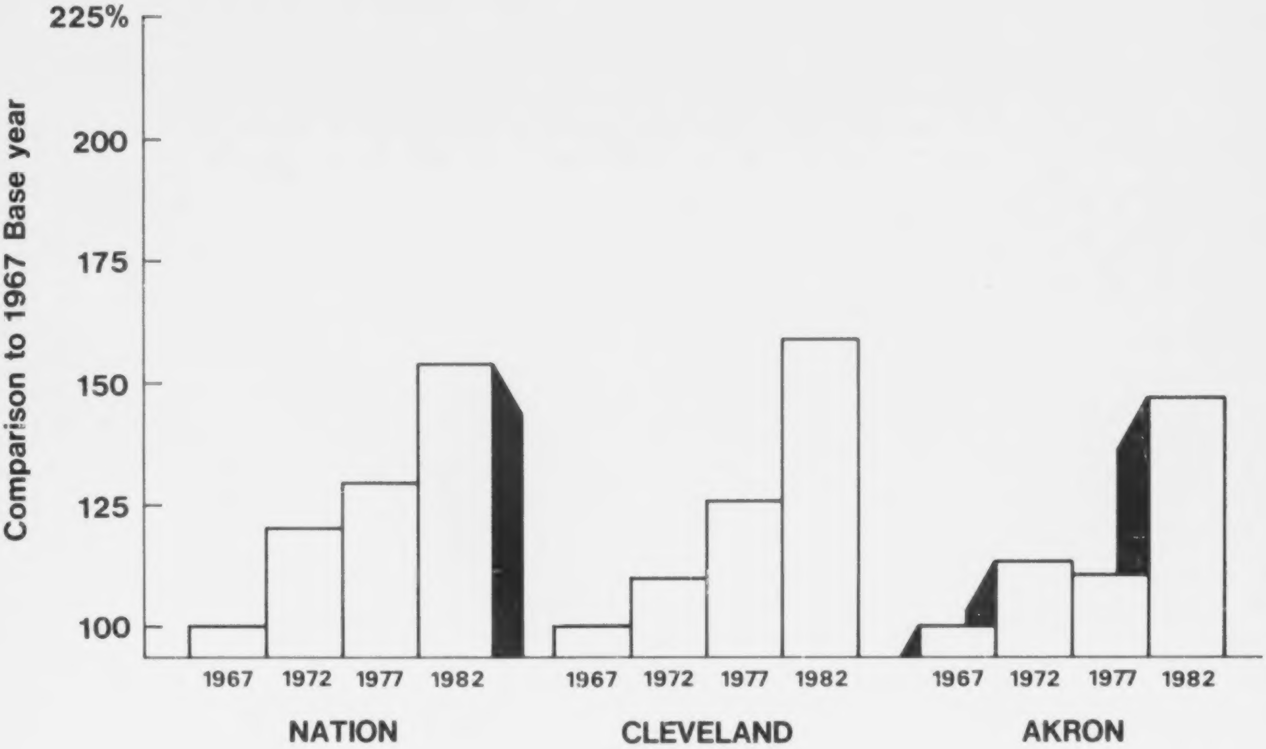
## Manufacturing Firms Based in the Region

The presence of manufacturing firms based in the region represents another perspective from which to study the headquarters path to development. Different measures of headquarters strength are examined, utilizing longitudinal and cross-sectional analyses. Measures include the number of *Fortune* firms headquartered in the region; changes in their sales, an indicator of their global competitiveness; resources controlled, which require headquarters supervision; the concentration of manufacturing decision-making power in the region resulting from the presence of headquarters; the presence of smaller manufacturing firms headquartered in the region; the existence of privately held manufacturing headquarters; and divisions of firms located here but headquartered elsewhere.

*Firm Characteristics*

In 1985, there were 34 firms headquartered in the region qualifying for *Fortune* 1,000 status: 29 in the Cleveland PMSA and five in Akron. Sixteen of this number were part of the *Fortune* First 500, 12 of which were in the Cleveland PMSA. This compares with 1970, when there

**Figure 2**
**CAO Manufactuering Employment, 1967-1982**



were 40 *Fortune* firms in the region, 35 in Cleveland and five in Akron. Twenty-two were part of the *Fortune* First 500, 18 of which were located in the Cleveland PMSA (*Fortune*, 1971 and 1986).

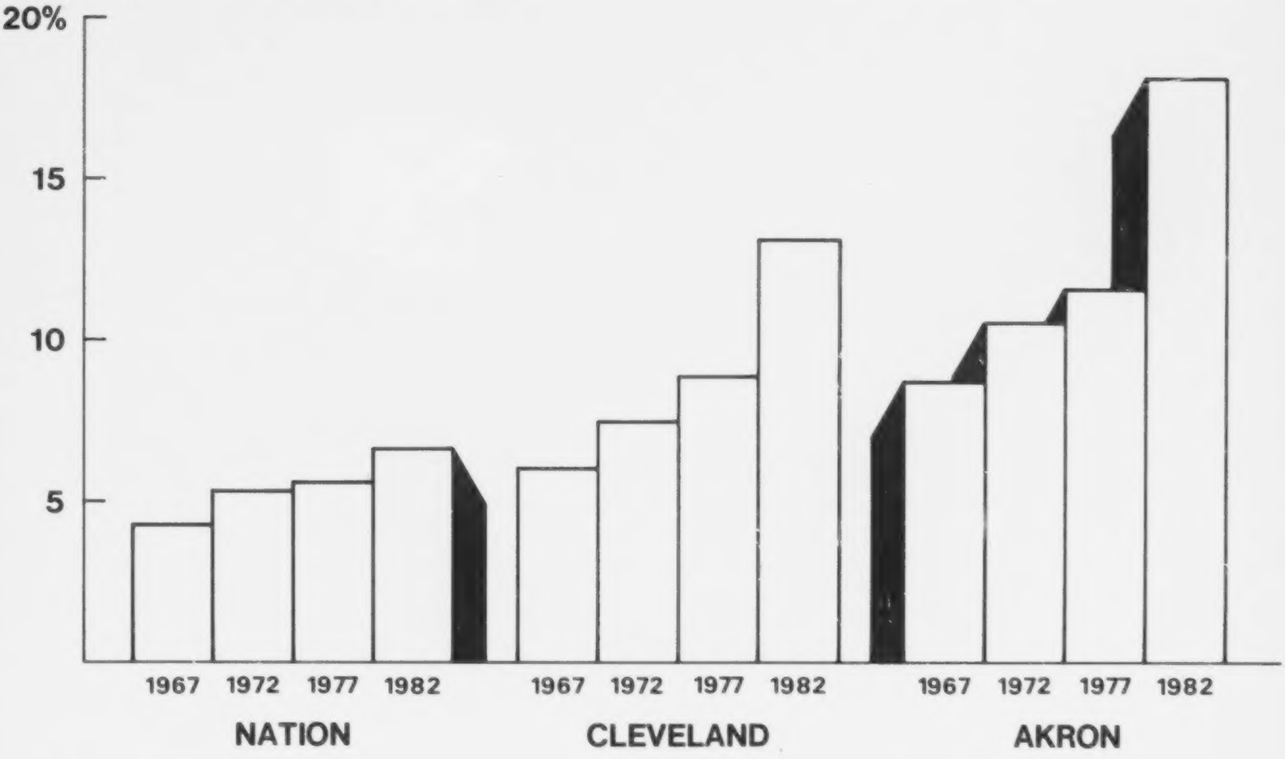
Aggregate sales (in 1982 dollars) for the 1985 *Fortune* First and Second 500 manufacturing firms (combined into the *Fortune* 1,000) in the region increased by 37.8 percent between 1970 and 1985, from $40.0 billion to $55.1 billion.[4] Sales for Cleveland PMSA *Fortune* firms rose by 83.1 percent, to $35.7 billion, while sales for firms in Akron declined by 6.7 percent, to $19.4 billion in 1985. Total *Fortune* 1,000 sales in the nation, meanwhile, increased by 36.9 percent. (See Figure 5.)

*Fortune* firms in the Cleveland PMSA, therefore, increased in sales at a rate more impressive than that for *Fortune* firms in the nation. This increase indicates continuing competitiveness in the national and global economies. Akron *Fortune* firm sales, however, remained stagnant over time.

Assets controlled by *Fortune* 1,000 firms in 1985 (in 1982 dollars) increased in the region by 52.2 percent, from $32.0 billion to $48.7 billion.[5] Assets for *Fortune* firms headquartered in the Cleveland PMSA increased in value by 129.6 percent, while declining by 17.4 percent in Akron. Assets controlled by *Fortune* firms in the nation increased by 48.1 percent. (See Figure 6.)

Total worldwide employment directed by *Fortune* firms headquartered in the region declined by 1.8 percent, from 602,700 to 591,800. Firms in the Cleveland PMSA increased worldwide employment by 28.4 percent, while Akron PMSA *Fortune* firms declined by 26.5 percent. *Fortune* firms in the nation experienced a 4.3 percent decline, from 16.3 million to 15.6 million. (See Figure 7.)

**Figure 3**
**Share of CAO to Manufacturing Employment**



The *Fortune* firms in the Cleveland PMSA, therefore, increased in two key resources over time: the number of employees directed and the assets controlled. This could provide a partial explanation for local increases in regional CAO employment and payrolls — that is, additional CAO employment is required to manage a growing resource base. *Fortune* firms in Akron, meanwhile, faced a shrinking resource base, even while total manufacturing CAO increased.

Other factors, therefore, clearly are at work in explaining local CAO increases in the region. Among these are the growth in smaller manufacturing firms headquartered in the region and privately held manufacturing firms, growth in divisional or regional headquarters employment, and the rise of headquarter functions for reasons other than resource direction and control, such as government-mandated functions and information processing. Limited information is available for some of these factors.

In 1985, for example, there existed 13 manufacturing firms in the region with sales ranging from $47.1 million to $118.3 million. These firms fall just below the *Fortune* Second 500 group in sales rank. Sales totaled $959.3 million, compared with $752.3 million in 1984, an increase of 27.5 percent (*Crain's Cleveland Business*, 1986A).[6] Sales growth could indicate market and product expansion and a corresponding increase in CAO employment.

There were eight manufacturing firms in the top 30 privately held firms headquartered in the region. Estimated sales amounted to $1,490.7 million in 1986, compared with $1,230.0 million in 1985 (*Crain's Cleveland Business*, 1987). These firms also require headquarters activity.

**Figure 4**
**Manufacturing CAO Payroll Data, 1967-1982**

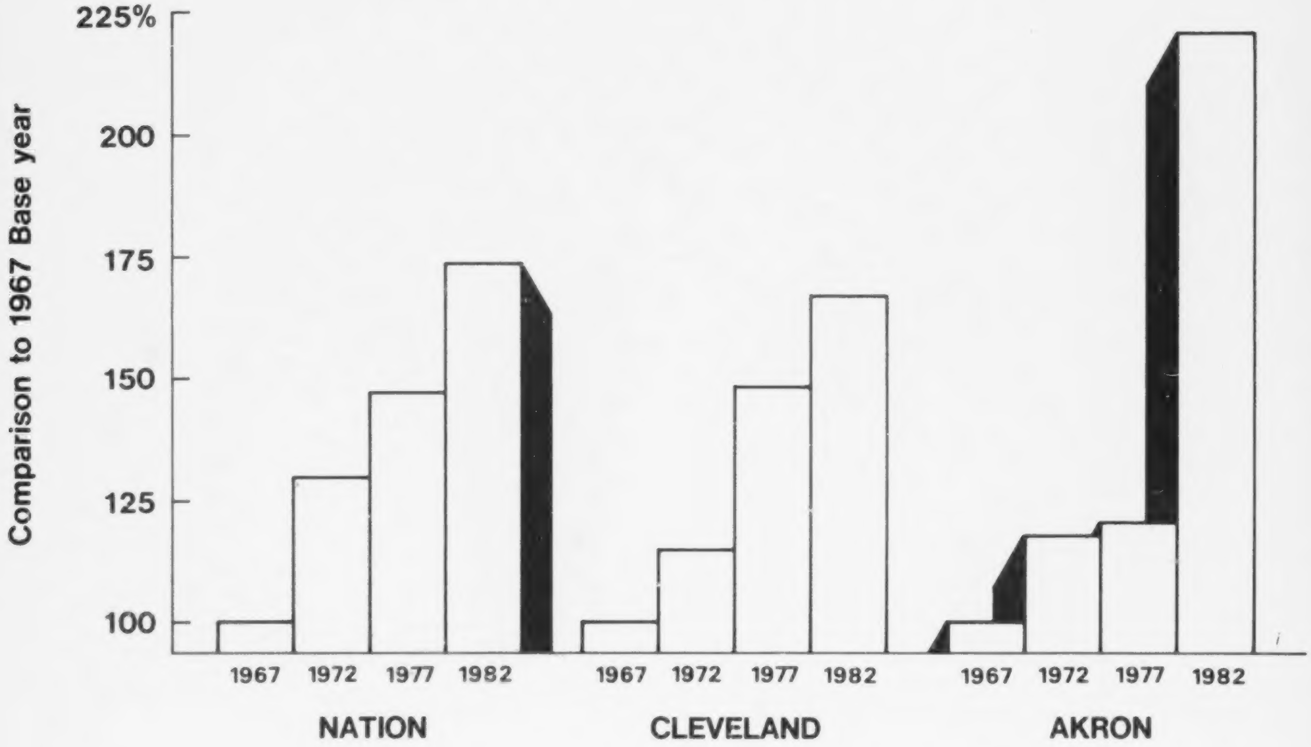


Figure 5
Change in Worldwide Sales of Fortune 1000 Manufacturing Firms
(in billions, adjusted to 1982)

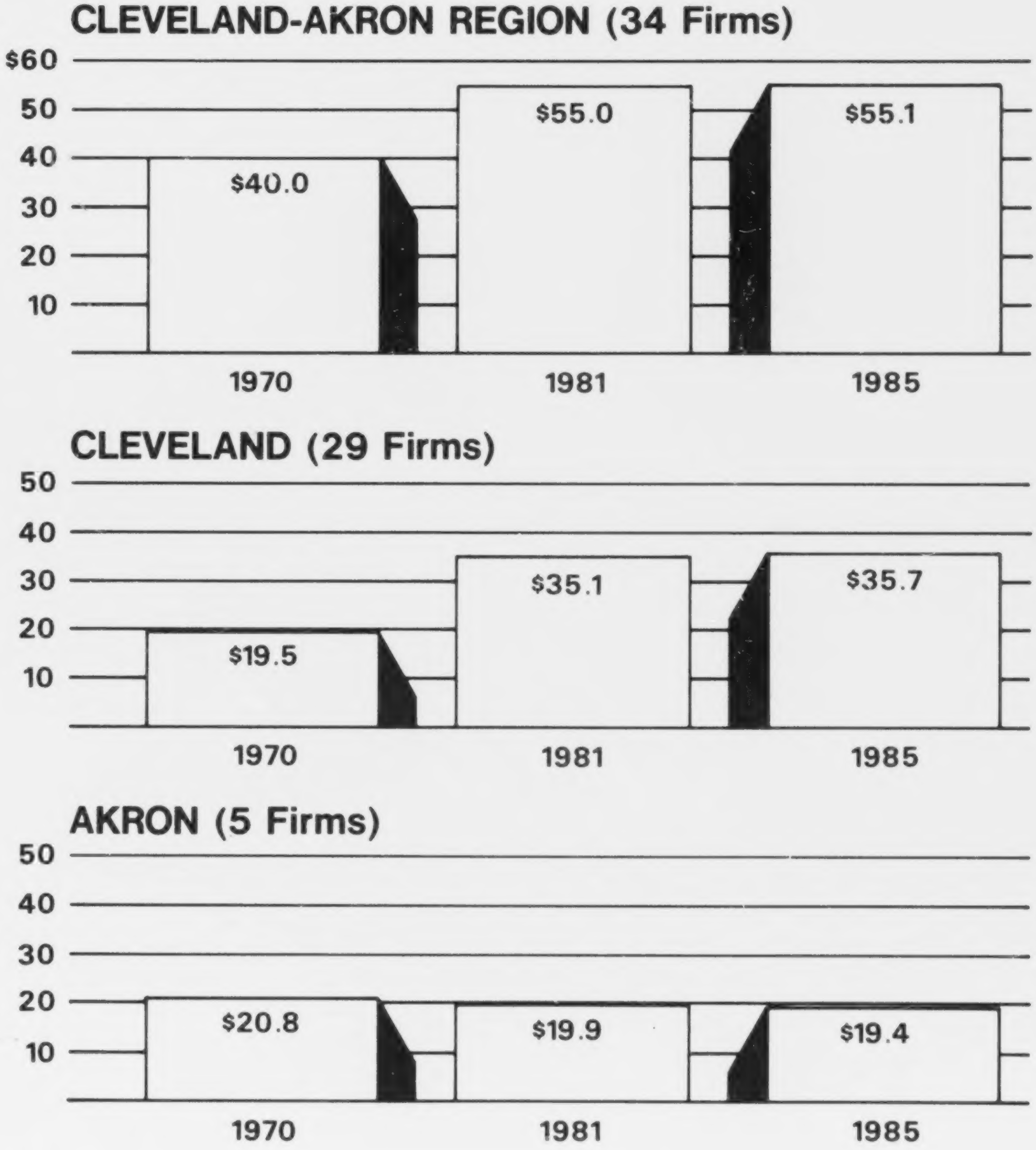
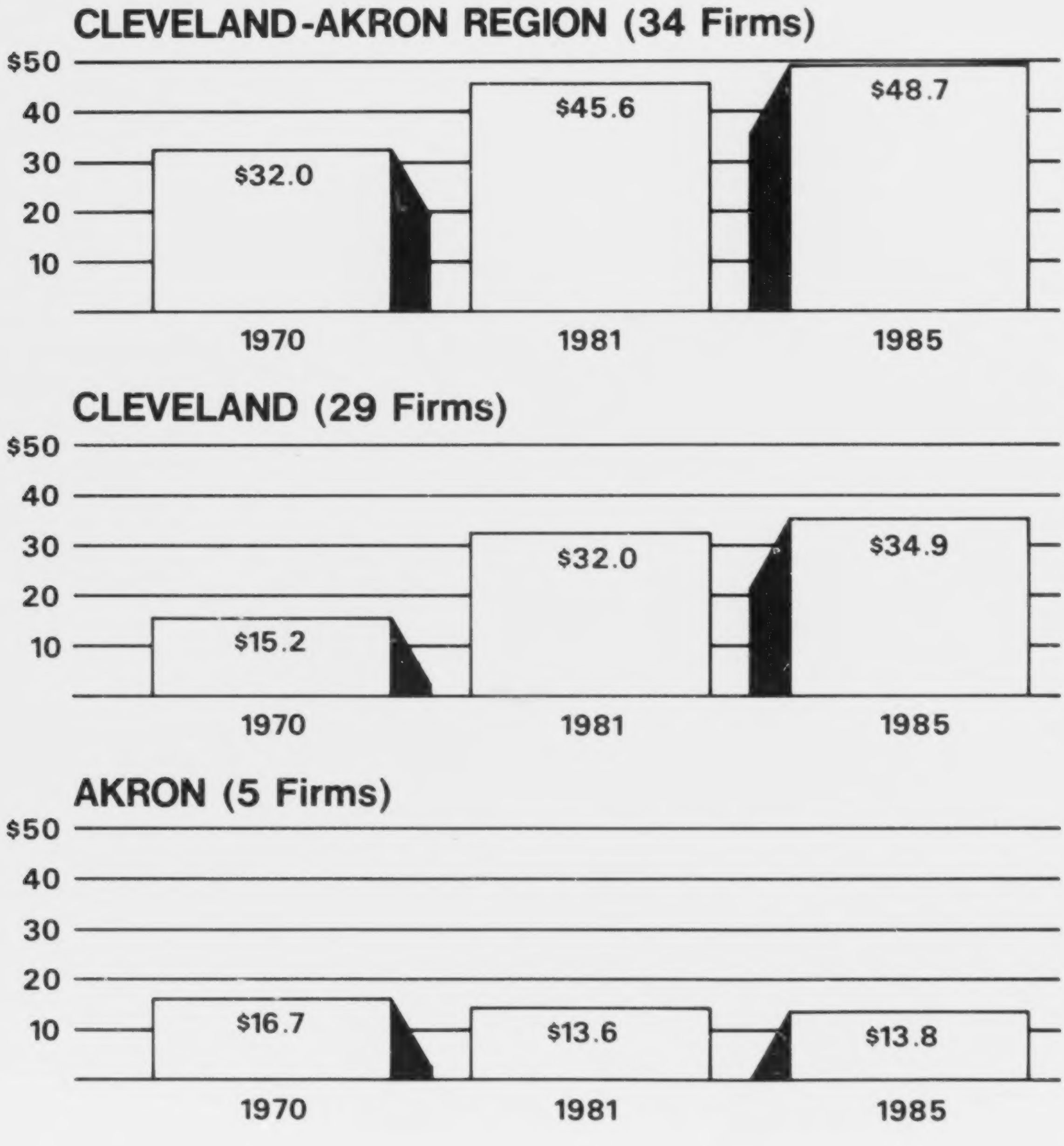


Figure 6
Change in Assets Controlled by Fortune 1000 Manufacturing Firms
(in billions, adjusted to 1982)



In addition, of the top 22 divisions of companies headquartered elsewhere, 12 are in manufacturing. Area employment totaled 63,343 in 1986, a part of which is involved in central administration tasks (*Crain's Cleveland Business*, 1986b).

Information is incomplete. However, data available for these firm groupings suggest the presence and growth of CAO employment and payroll activity in the region in addition to *Fortune* firms.

### *Manufacturing Decision-Making Power*

Another perspective from which to study the headquarters path to development is the presence of large-scale manufacturing decision-making power in the region relative to population size. Decision-making power is defined in two ways: by worldwide employment directed by *Fortune* firms headquartered in the region; and by assets (in 1982 dollars) controlled by these firms. The use of these measures is based on the rationale that firms must make decisions about how best to use their human and capital resources to remain competitive in a global economy. Directing the efforts of employees and use of assets connotes considerable decision-making power.

This power is measured by a location quotient (LQ), defined as:

$$LQ = \frac{WE_{ca}}{POP_{ca}} \div \frac{WE_{us}}{POP_{us}}$$

**Key:**

$WE_{ca}$ = Worldwide employment of *Fortune* firms headquartered in the region

$POP_{ca}$ = Regional population

$WE_{us}$ = Worldwide employment for *Fortune* firms headquartered in the nation

$POP_{us}$ = National population

Asset totals are substituted for worldwide employment to arrive at an assets LQ. An LQ above 1.00 indicates that the region is more highly concentrated in *Fortune* manufacturing decision-making power than the nation, relative to population size.

Findings indicate that the LQ resulting from the presence of *Fortune* First 500 firms in the Akron PMSA stood at 6.35 when measured by worldwide employment and 3.35 for assets controlled in 1985. That is, when measured by worldwide employment, decision-making power in the Akron PMSA is more than six times as concentrated as that for *Fortune* firms in the nation. By contrast, concentration was much less significant for the Akron Second 500 (1.23 and 1.01 respectively), due to the presence of only one Second 500 firm.

The LQ for *Fortune* First 500 firms headquartered in the Cleveland PMSA stood at 2.76 measured by worldwide employment and 2.72 for assets controlled. Concentration was much stronger for Cleveland PMSA Second 500 firms (4.06 and 5.20 respectively).

Worldwide employment LQ's have remained relatively stable since 1970 for the Cleveland and Akron PMSA's. Asset LQ's have increased slightly for *Fortune* Second 500 firms in the Cleveland PMSA, 3.81 to 5.20, while declining for Akron *Fortune* First 500 firms, 5.18 to 3.35 (Kinsella, 1987).

High worldwide employment LQ's have resulted from the presence of *Fortune* manufacturing firms. They remain high despite recent *Fortune* departures. This is due, in part, to population decline. Asset LQ's have increased in the Cleveland PMSA because of rapid asset growth coupled with declining population. In Akron's case, asset levels for *Fortune* firms declined at a rate greater than the population, leading to lower LQ's over time.

According to a study by Wilbur and Philip Thompson in 1983, the concentration of decision-making power as measured by worldwide employment for *Fortune* First 500 firms in the Akron PMSA in 1983 was the highest for all 72 metropolitan areas with at least 500,000 population. *Fortune* First 500 firms in the Cleveland PMSA ranked sixth highest of 32 metropolitan areas with more than 1,000,000 population, following Pittsburgh, Detroit, New York, Minneapolis-St. Paul and St. Louis.

Decision-making power resulting from the presence of *Fortune* Second 500 manufacturing firms in the Cleveland PMSA was the highest for all metropolitan areas with more than 1,000,000 population, just ahead of Atlanta. Akron's concentration, however, was only twenty-third in rank.

The Second 500 firms based in the Cleveland PMSA (there were 17 in 1985) provides a reservoir of First 500 candidates. Since 1970, five firms have moved from Second to First 500 status.[7]

In summary, considerable concentration of *Fortune* decision-making power is present in the region. Akron has developed First 500 strength, while Cleveland's strength rests with Second 500 firms. These two geographic areas rank extremely high in decision-making power, when measured by worldwide employment, relative to their population size. This provides further evidence of the region's existence as a strong headquarters center.

### *Departures, Mergers and Acquisitions*

*Fortune* firm departures, mergers and acquisitions also are examined. Since 1970, five *Fortune* 500 firms have departed the region.[8] These "move-outs" resulted in the loss of $9.0 billion in sales, 78,281 worldwide employees and $7.9 billion in assets controlled for the year 1985. These departures, no doubt, have diminished the region's strength as a headquarters and decision-making center. However, their loss brings into even sharper focus the need to understand the region's distinctive competence and its importance to the economy.

In addition, nine *Fortune* First and Second 500 firms headquartered here have been acquired by firms outside the region between 1970 and 1985.[9] Many of these acquired firms, however, retain CAO operations in the region, even while control has shifted elsewhere. Cases also exist where headquarter operations have closed or departed.

## Related Advanced Services

Headquarters usually do not possess in-house all the required expertise to meet the needs of firms. Therefore, they frequently contract out to specialized advanced services in the region, resulting in the creation of wealth and jobs. These organizations have developed unique areas of expertise, for example, in law, accounting and advertising. The presence of headquarters is important in the formation and development of these advanced services. At the same time, the expertise offered by these services enables firms headquartered here to remain competitive.

Advanced business services employment has increased in the region, partly as a result of manufacturing headquarter demand for their services. Total employment in five advanced services categories (legal, advertising, engineering, accounting and banking) increased by 49.6 percent since 1970, from 24,328 to 36,396 *(County Business Patterns)*. This type of employment, meanwhile, increased by 47.0 percent in the Cleveland PMSA, from 20,836 to 30,621, and by 65.4 percent in the Akron PMSA. Major percentage gains in employment over time in the region were made in these areas: legal (109.8 percent), accounting (76.9 percent) and engineering (73.4 percent).

However, advanced business services employment growth in the nation gained at an even more impressive rate. Total employment for the five categories grew from 1.8 million to 3.4 million, or 83.2 percent *(County Business Patterns)*. The national and regional difference is explained in part by the fact that traditional manufacturing centers historically have lagged in services growth because of the nature of their economic base. Moreover, the presence of manufacturing headquarters in the region means that many of these advanced services are performed in-house, and therefore count as manufacturing employment.

Further examination reveals that payroll per employee for these advanced services in the region approximates that of the nation. The Cleveland PMSA is slightly higher in the legal, accounting and banking areas. Moreover, payroll per employee from production activity stands at $19,528, compared with $21,980 for legal, $21,573 for advertising and $24,047 for engineering, all of which include clerical wages as part of payroll.

In summary, skills possessed by these advanced business services are critical to a headquarter's success. As such, they are an important component of the headquarters path. The region has increased its advanced service employment over time. Payroll per employee is comparable to that of advanced services for the nation. Moreover, it exceeds that for production workers in the region. Advanced services, therefore, loom important in the headquarters path to development, despite the fact that their regional growth lags that of the nation.

## Overview

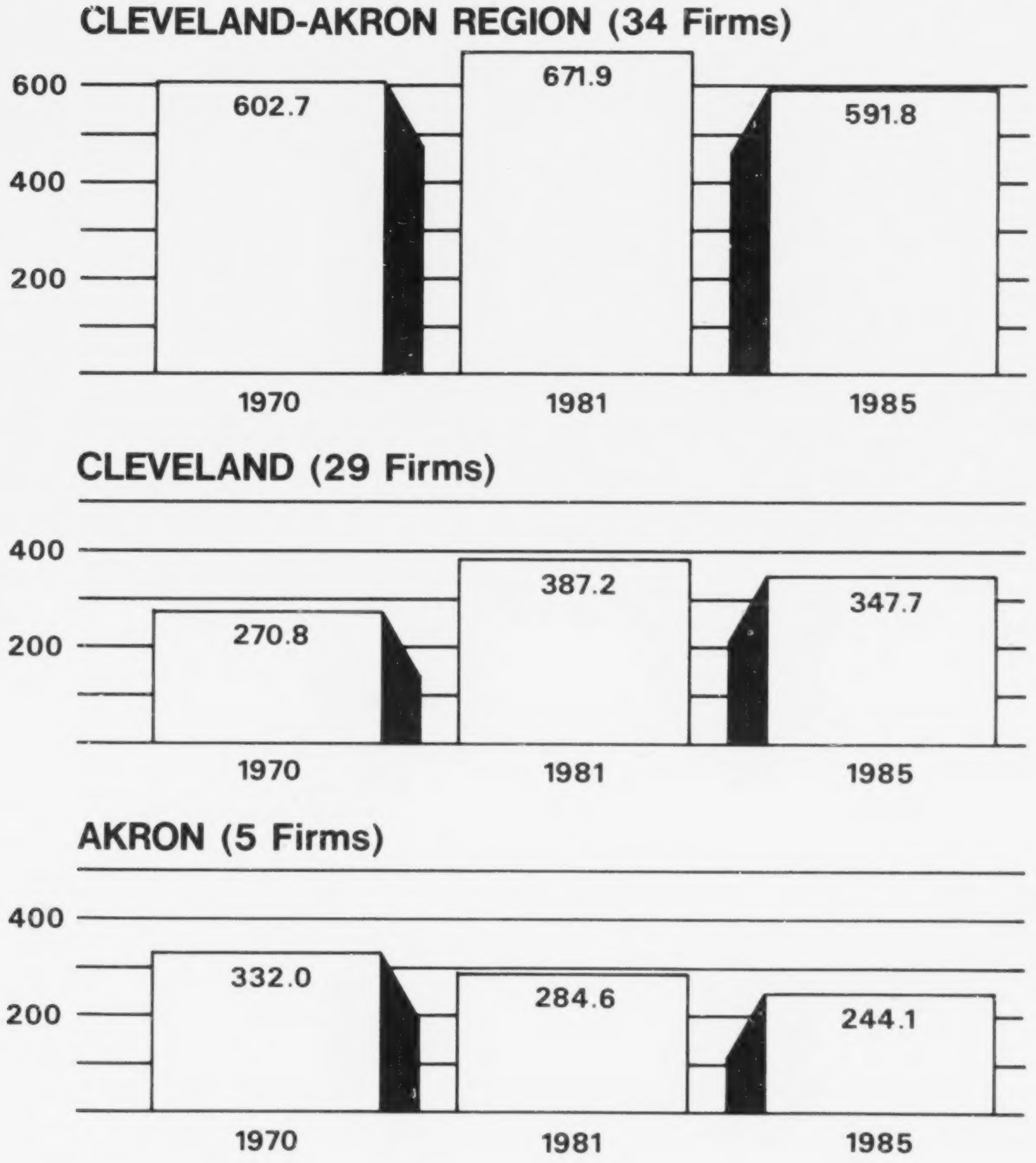
The purpose of this research was to examine the headquarters path to development in the Cleveland-Akron region. This path was measured from three perspectives, including CAO activity within manufacturing, the presence of manufacturing firms headquartered in the region, and the existence of advanced business services.

Key findings include: the growing importance of well-paid CAO employment in the region, replacing lower-paid production activity; the strong presence of *Fortune* manufacturing firms; the region's existence as a concentrated manufacturing decision-making center; the growth in smaller manufacturing firms and privately held manufacturing headquarters; the presence of divisional headquarters; and the growth of well-paid advanced services occupations.

At the same time, research findings indicate areas of concern. The region has witnessed *Fortune* firm departures during the past 15 years; headquarters activity has been lost through mergers and acquisitions; and advanced services in the region have grown, but not as rapidly as that for the nation.

Despite these cautions, findings indicate the importance of knowledge-based activity in the region that comprises the headquarters path to development. This path clearly provides a source for wealth and job creation. It represents hope for a region facing the loss of routinized production jobs that will not return. However, the continued presence of headquarters and related advanced services is by no means secured. Therefore, it is essential that economic development practitioners formulate a regional strategy to understand the headquarters path and the evolution of headquarters and related advanced services, and to capitalize on the opportunities they offer for development. This path — the region's distinctive competence — provides a foundation on which to build the region's economic future.

**Figure 7**
**Changes in Worldwide Employment Directed by Fortune 1000 Manufacturing Firms (in 1000s)**



## Notes

1. Special thanks to Professors Wilbur Thompson, Philip Thompson and Edward Hill, College of Urban Affairs, Cleveland State University, for their insights and suggestions. Thanks to John Olson and Milos Markovic for their assistance in data collection, programming and graphics.
2. This definition of knowledge activity was derived from the following authors and their works: Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton, N.J.: Princeton University Press, 1962); Peter Drucker, *The Age of Discontinuity: Guidelines to Our Changing Society* (New York: Harper and Row Publishers, 1969); Jean Gottman, "Urban Centrality and the Interweaving of Quarternary Activities," *Ekistics* 29 (May, 1970): 322-331; John McHale, "The Changing Information Environment: A Selective Topography," in *Information Technology, Some Critical Implications for Decision Makers* (The Conference Board: November 1971); Daniel Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting* (New York: Basic Books, 1975); U.S. Department of Commerce, Office of Telecommunications, *The Information Economy: Definition and Measurement,* by Mark Uri Porat, OT Special Publication 77-12 (1) Washington, D.C.: U.S. Government Printing Office, May 1977); Richard V. Knight, "City Development in Advanced Industrial Societies," in Gary Gappert and Richard Knight, eds. *Cities In The 21st Century* (Beverly Hills, 1982): 47-68; Jean Gottman, *The Coming of the Transactional City* (College Park, Maryland: University of Maryland, Institute for Urban Studies, 1983).
3. Payroll figures are adjusted to 1982 dollars utilizing personal consumption expenditures. See "fixed-weight price indexes for Gross National Product, 1982 weight, 1959-1985," Table B-4, Appendix B, p. 258, in *Economic Report of the President*, transmitted to the Congress, February 1986; and the *Annual Report of the Council of Economic Advisors* (Washington D.C.: U.S. Government Printing Office, 1987).
4. Sales are adjusted to 1982 dollars producer-price-index levels for total manufacturing. See U.S. Department of Commerce, Bureau of Economic Analysis, *Business Statistics 1984: A Supplement to the Survey of Current Business* (Washington D.C.: U.S. Government Printing Office, 1985), p. 27. for 1970-1984 data. 1985 data is in U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* March 1986, Vol. 66 No. 3, "Current Business Statistics," S-6.
5. Assets are adjusted to 1982 dollars using the implicit price deflator, fixed investment, non-residential. See U.S. Department of Commerce, Bureau of Economic Analysis, *Business Statistics 1984: A Supplement to the Survey of Current Business,* Washington, D.C.: U.S. Government Printing Office, 1985; U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* March 1986, Vol. 66, No. 3.
6. The increase using the producer price index (1982 dollars) amounted to 26.9 percent.
7. These include American Greetings, North American Coal, Scott & Fetzer, Ferro and, most recently, Banner Industries and Standard Products.
8. These include Diamond Shamrock (Dallas), Harris Corp. (Melbourne, Fla.), AM International (Los Angeles and Chicago), Figgie International (Richmond, Va.), and White Motors (Farmington, Mich.).
9. These include White Consolidated (Electrolux), Midland Ross (Forstmann Little & Co.), Scott & Fetzer (Berkshire Hathaway Inc.), Republic Steel (LTV), Weatherhead (Dana), Motch & Merryweather (Orelikon-Buehrle), Warner & Swasey (Bendix Corp.), Technicare (Johnson & Johnson, General Electric), and Medusa (Crane Co.).

## Bibliography

Armstrong, Regina B. *The Office Industry: Patterns of Growth Location.* Cambridge, Mass.: 1972.

Bell, Daniel. *The Coming of Post-Industrial Society: A Venture in Social Forecasting.* New York: Basic Books, 1975.

Burns, Leland and Pang, Wing Ning. "Big Business in The Big City. Corporate Headquarters in the CBD." *Urban Affairs Quarterly* 12, 4 June 1977): 533-544.

Bluestone, Barry; Harrison, Bennett; and Baker, Lawrence. *Corporate Flight: The Causes and Consequences of Economic Dislocation* (Washington, D.C., 1981).

Bluestone, Barry and Harrison, Bennett. *The Deindustrialization of America.* New York: Basic Books, 1981.

*Crain's Cleveland Business.* "Greater Cleveland's Top Public Companies," May 26, 1986A.

*Crain's Cleveland Business.* "Area's Top Privately-Held Companies," February 16, 1987.

*Crain's Cleveland Business.* "Top Area Divisions of Non-Local Companies," October 20, 1986.

*Economic Report of the President.* Transmitted to Congress. February 1986. Washington, D.C.: U.S. Government Printing Office, 1987.

*Fortune.* First and Second 500 Manufacturing Directories. Various Issues, 1970-1985.

Drucker, Peter. *The Age of Discontinuity: Guidelines to Our Changing Society.* New York: Harper and Row, Publishers, 1969.

Gottman, Jean. *The Coming of the Transactional City.* College Park, Md.: University of Maryland. Institute for Urban Studies, 1983.

Gottman, Jean. "Urban Centrality and the Interweaving of Quarternary Activities." *Ekistics* 29 (May 1970): 322-331.

Green, Mark J., with Moore, Beverly C., and Wasserstein, Bruce. *The Closed Enterprise System.* New York: Bantam Books, 1972.

Kinsella, Timothy K. "Large-Scale Manufacturing Decision-Making Power in the Cleveland-Akron Region: Worldwide Employment and Asset Perspectives, 1970-1985." Urban Center, Cleveland State University, January, 1987. Unpublished Report.

Knight, Richard V. "City Development in Advanced Industrial Societies." In *Cities in the 21st Century,* edited by Gary Gappert and Richard V. Knight. Beverly Hills: Sage Publications, 1982.

Knight, Richard V. and Gappert, Gary. "Cities and the Challenge of the Global Economy." In *Urban Economic Development,* edited by Richard D. Bingham and John P. Blair. Beverly Hills: Sage Publications, 1984.

McHale, John. "The Changing Information Environment. A Selective Topography." In *Information Technology. Some Critical Implications for Decision Makers.* The Conference Board (November, 1971).

Machlup, Fritz. *The Production and Distribution of Knowledge in the United States.* Princeton, N.J.: Princeton University Press, 1962.

Manners, Gerald. "The Office in Metropolis: An Opportunity for Shaping Metropolitan America." *Economic Geography* 50, 2 (April 1974): 93-110.

Miller, S.M. "Changing Worker in a Changing Economy," in Irving Louis Horowitz, John C. Leggett, Martin Oppenheimer, eds., *The American Working Class. Prospects for the 1980's* (New Brunswick, N.J., 1979).

Noyelle, Thierry J. and Stanback, Thomas M. *The Economic Transformation of American Cities.* Totowa, N.J.: Allanheld, Osmun, 1983.

Noyelle, Thierry J. "The Rise of Advanced Services: Some Implications for Economic Development in U.S. Cities." *Journal of the American Planning Association* 49 (1985): 280-290.

Ohio Bureau of Employment Services. "Ohio Labor Market Information." Series RS 219, various years. Prepared by the Division of Research and Statistics.

Pred, Allan. *City-Systems in Advanced Economies: Past Growth, Present Processes and Future Development Options.* New York: John Wiley & Sons, 1977.

Pred, Allan R. *Major Job Providing Organizations and Systems of Cities: Commission on College Geography.* Resource Paper No. 27. Washington, D.C.: Association of American Geographers, 1974.

Quante, Wolfgang. *The Exodus of Corporate Headquarters from New York City.* New York: Praeger Publishers: 1976.

Semple, Keith R. "Recent Trends in Spatial Concentration of Corporate Headquarters." *Economic Geography* 49, 4 (October 1973): 309-318.

Stanback, Thomas M., Jr., et al. *Services/The New Economy.* Totowa, N.J.: Allanheld, Osmun, 1981.

Thompson, Wilbur R. and Thompson, Philip R. "Percentage CAO in Manufacturing, 1977 and 1982: The Largest 72 Metropolitan Areas." College of Urban Affairs, Cleveland State University, 1984. Unpublished data.

Thompson, Wilbur R. and Thompson, Philip R. "From Industries to Occupation: Rethinking Local Economic Development." *Economic Development Commentary* 9, 3 (Fall 1985): 12-18.

Thompson, Wilbur R. and Thompson, Philip R. "Decision Making Power of *Fortune* Firms Headquartered in the Largest Metropolitan Areas of the Nation." College of Urban Affairs, Cleveland State University, 1984. Unpublished data.

U.S. Department of Commerce, Bureau of the Census. 1982. *Census of Manufacturers.* MC82-S1 (Part 1) Subject Series. General Summary Part 1. Industry, Product Class and Geographic Area Statistics, March 1986.

U.S. Department of Commerce, Bureau of the Census, 1982. *Census of Manufacturers.* ML82-A-36 Geographic Area Series. Ohio. May, 1985.

U.S. Department of Commerce, Bureau of Economic Analysis. *Business Statistics 1984. A Supplement to the Survey of Current Business.* Washington, D.C.: U.S. Government Printing Office, 1985.

U.S. Department of Commerce, Bureau of Economic Analysis. *Survey of Current Business.* March 1986, Vol. 66, No. 3. Washington, D.C.: U.S. Government Printing Office, 1986.

U.S. Department of Commerce, Office of Telecommunications. *The Information Economy: Definition and Measurement.* By Marc Uri Porat, OT Special Publication 77-12 (1). Washington, D.C.: U.S. Government Printing Office, May 1977.

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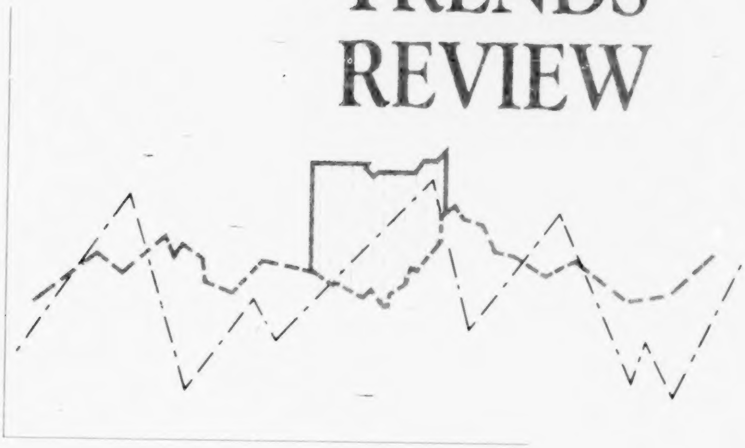
Volume 3 Number 2

# OHIO ECONOMIC TRENDS REVIEW



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# OHIO ECONOMIC TRENDS REVIEW

*This issue of the* Ohio Economic Trends Review *is dedicated to infrastructure — public roads, bridges, water supply, sewer systems and public buildings — and to the challenges and choices that face those interested in the topic. Infrastructure problems go beyond the inconvenience of potholes and detours to the point of being a major obstacle to economic development, inhibiting the ability of states and localities to attract and keep businesses and jobs.*

*The problem was addressed last year at a conference held in Columbus, Ohio, titled "Infrastructure and Local Growth: Paving the Way." Much of the material for this issue comes directly from presentations or papers delivered at that conference. It was sponsored by the National Council for Urban Economic Development, the Ohio Council for Urban Economic Development, and the Fiscal Futures Service of Cleveland State University's College of Urban Affairs, with support from the Economic Development Administration, U.S. Department of Commerce.*

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# Infrastructure and Public Policy:

## Lessons from the Past and a Framework for the Future

*By Lawrence F. Keller*

Fiscal stress is the most noted feature of the contemporary city. Observers see continuing and even increasing shortfalls between the needs of government and the revenue from current tax levels, especially in larger central cities. Additionally, the national government with its deficits is unable and unwilling to provide significant funding. State governments have done little to fill the void left by the withdrawal of federal funds, such as General Revenue Sharing. Most alarmingly, these observers lament the shortfall as cities face the necessity of rebuilding their infrastructure. Their dismal scenario pictures mounting expenditures and diminishing revenues in a time of economic transition and intense political ideologies.

The solution to the problem of infrastructure, according to the current "conventional wisdom," is to call upon the private sector to participate in and finance the rebuilding. Though this promises to offer some financial succor and certainly complements efforts at economic development, it tends to ignore a long and tawdry history of private sector involvement in urban infrastructure.

What follows is a brief review of urban history surrounding what is now called infrastructure, and an interorganizational perspective for more realistically evaluating proposals for the private sector to become more involved. If we do not reconceptualize local government, we may indeed invite a repetition of a sorry urban history of corruption and ineffectiveness.

### Historical Perspective

After the Civil War, the United States was quickly transformed from an agricultural society to an urban nation. The rapid growth of cities required extensive infrastructure, from transportation systems to sewers. However, government in the city was minimal and small scale, reflecting our pastoral setting and Jeffersonian proclivities. The building of the infrastructure was, therefore, most frequently done by private companies.

Unfortunately, city government was not only small but also corrupt. Building infrastructure required permission of government. The government granted franchises to private concerns which thereby secured monopolies over service. Additionally, governments controlled other aspects of the process, typically requiring franchise holders to perform a variety of "public" services, such as the hiring of certain people. These controls combined legal and political powers. The end result was to create locally based corporations who owed their successes to government contracts and who fed the corrupt political machines.

Around the turn of the century, many cities experienced reform movements. Some, such as Cincinnati, were transformed dramatically and over the long term. Others, such as Cleveland, were changed only superficially and for a short term. The final outcome of reform was uneven, changing some cities, not touching others and in many, changing some aspects but leaving other areas dependent upon current actors for their sobriety and effectiveness.

### Approaches to Private Involvement

The call for the participation of the private sector in rebuilding infrastructure reflects an obsession with the economics of governance.

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Governance is the legitimately setting of missions and goals and the design of administrative systems to attain these. In fact, the concern with economics has led some to propose the "privatization" generally of local services. Unfortunately, the obsession with economics obscures a real issue — political accountability. Although many if not most cities have shed political machines, they are far from establishing systems of accountability that consistently relate action to a larger frame of public interests.

Not only does the absence of accountability systems counsel caution in advocating local government to involve the private sector in governance, so does the paucity and immaturity of theories. Theoretically, academicians have focused on formal structures, especially administrative arrangements, partisan politics and program economics. A concern with formal governmental structure ignores the importance of other actors. Focusing on politics looks only at lines of power while traditional economic perspectives examine only costs and who pays. Thus, traditional theoretical approaches from Public Administration, Political Science and Economics are clearly inadequate. A relevant framework must be able to locate governmental and non-governmental actors relative to policy, economics and the public. A political economy interorganizational approach can accomplish this task.

## Interorganizational Governance Networks

Modern cities are interorganizational fields of action. (Turk; Warren) Public policy as well as private action involves actors representing or interacting with large complex organizations. Even neighborhood movements are typically organized, sometimes in more than one organization, such as a neighborhood organization for planning purposes and another for economic development. To explain even simple policies or events requires acknowledging and understanding how complex organizations behave and interact.

Governing the city has always involved constructing interorganizational networks. This has seldom been done consciously. Rather, in a hit or miss fashion policymakers have constructed networks of governmental and non-governmental actors around specific policies. Many of these involved other units of government, such as the extensive grant-in-aid programs of the national government. Federalism became a complicated patchwork of local, state and national organizations typically focused on specific policies. (Wright) Many despaired of even coordinating these complex policy arenas, calling cities "ungovernable" or "contested." (Yates; Mollenkopf) The most demeaning metaphor perceived the city "as a sandbox," in which a variety of actors merely moved the sand around with little or no concern for outcomes.

To overcome the temptation for corruption inherent in private sector activity in infrastructure and the need to coordinate complex arenas of public policy and administration, we must consciously build interorganizational networks focused on governing the city. Specifically, we must develop Interorganizational Governance Networks (IGNs) that ground policy in a larger public interest, adhere to democratic norms and produce effective policies. Without constructing such networks, we invite the disarray of the "ungovernable city" as well as the corruption of the political machine.

The design, construction and maintenance of these networks are possible under any form of government. However, professionally based systems, especially the Council-Manager plan, promise increased ability to attend to the task of building and maintaining IGNs over time. In any system, professionals must have a meaningful role if we are to focus on the public interest and the long term. However, these professionals must be accountable to those elected by the public and serve in institutions that not only respond to short term political needs but also serve the long term interest of people and the city.

## Characteristics of IGNs

IGNs can be conceptualized as those organizations within a city necessary for governing. Obviously, both public and private as well as many not-for-profits are included. It may be more appropriate to speak of organizations vested with a public purpose in addition to "public organizations." The crucial point is that all such organizations accrue duties as well as possess rights by participating in governance.

Effective IGNs have three crucial characteristics. First, they involve all organizations that are vested with a public purpose. The involvement is not just in name, but permits and indeed requests active participation in governance. Second, the IGN must have an authority structure, that is, the formal distribution of public rights, that roughly corresponds to the actual distribution of power. Such a distribution holds actors accountable as the public knows who should be doing what and establishes interorganizational relations in a "constitutional" sense. Finally, IGNs must be able to accomplish tasks with some degree of efficiency. In essence, IGNs must establish systems of authority and power, a polity and a production system, an economy.

In addition to internal polities and economies, IGNs must establish external polities and economies. They must be able to relate to other IGNs and other units of government. These external relations concern both exchanges, matters of economy and matters of polity. Table 1 summarizes the key characteristics of IGNs.

## Conclusion

The contemporary discussion about infrastructure fully captures the painful economic context of local government but ignores its political accountability. History amply if sadly documents that accountability has infrequently been attained. Without effective accountability, the involvement of the private sector in both the rebuilding of infrastructure and the delivery of public services is fraught with peril.

The need is to view governance more realistically by capturing the organizational context of cities and the behavior of agencies vested with a public purpose. The former can be accomplished with an interorganizational perspective. The latter requires theories such as Hjern and Porter's "implementation structures." Most fruitfully, we need to conceptualize IGNs and to educate public officials to build and nurture these consciously. If we fail, we only justify the typical American belief that local government is a "school for scoundrels" and imperil governance in a time of profound and difficult transition.

## References

Hjern, B., and Porter, D. O. (1981). Implementation structures: a new unit of administrative analysis. *Organizational Studies* 2:3, pp. 211-227.

Mollenkopf, J. H. (1983). *The Contested City.* Princeton, N. J.: Princeton University Press.

Turk, H. (1976). *Organizations in Modern Life: Cities and Other Large Networks.* San Francisco: Jossey-Bass.

Wamsley, G. L., and Zald, M. (1973). *The Political Economy of Public Organizations.* Lexington, Mass: Lexington Books.

Warren, R. L. (1987). *The Community in America. 3rd ed.* Lanham, Md.: University Press of America.

Wright, D. S. (1982). *Understanding Intergovernmental Relations. 2nd ed.* Pacific Grove, Cal.: Brooks-Cole.

**Table 1: Major Components of a Typical IGN**

| | Internal Structure and Process | External Structure and Process |
|---|---|---|
| POLITICAL | • Institutionalized distribution authority and power–<br>• Dominant coalition or faction<br>• Opposition factions, etc.<br>• Succession system for executive personnel<br>• Recruitment and socialization system for executive cadre<br>• Constitution<br>• Ethos, myths, norms and values based on institutional purpose<br>• Patterns for aggregation and processing of demands for change from lower personnel | • Superordinate and authoritative executive bodies and offices (and their extensions — budget, personnel, staff<br>• Superordinate and authoritative legislative bodies and committees<br>• Media — communications experts and extensions: ombudsman, inspectorates)<br>• Independent review bodies: courts, etc.<br>• Competitors for jurisdiction and functions<br>• Interest groups and political parties<br>• Interested and potentially interested citizenry |
| ECONOMIC | • Allocation rules<br>• Task and technology related unit differentiation<br>• Incentive system<br>• Pay, promotion, tenure and fringes<br>• Authority structure of task accomplishment<br>• Buffering cores of technology | • Input characteristics: labor, material, technology, facilities supply and cost factors<br>• Output characteristics: demand profile and channels for registering demands<br>• Industry structure<br>• Macro-economic effects on supply and demand characteristics |

Source: Wamsley and Zald (1973), p. 20.

# Infrastructure and Local Growth

*By Lori Gillen*

*The following is an excerpt from the draft of the National Council for Urban Economic Development Information Service, Report Number 42,* Innovative State and Local Economic Development Programs. *The report is based on a series of workshops held in 1987 under a cooperative agreement with the Economic Development Administration, U.S. Department of Commerce (#99-06-07226). Opinions stated are those of the author and not necessarily those of EDA or the federal government. Other chapters include strategic planning, small business development and banking. Copies of the report are available through CUED.*

That America's infrastructure is decaying has been documented in several recent studies. Pat Choate's study of the deteriorating public works system, *America In Ruins*, alerted the public to the potential magnitude of the infrastructure problem and the inherent costs of delay. This led to a national needs assessment by the Joint Economic Committee which reported that meeting the country's infrastructure needs through the year 2000 could take $1.57 trillion. Another study by the Government Finance Research Center estimated that $95.9 billion must be spent annually by states and localities to maintain essential facilities at adequate levels. And Ameritrust Corporation, in conjunction with the Stanford Research Institute, recently reported in *Investing in the Future* that the infrastructure bill to the year 2000 could be as high as $225 billion for the mid-American states alone.

While each of these studies has limitations, investment requirements of these magnitudes have sent state and local policymakers searching for solutions. The fundamental question that has emerged for public officials is whether we can afford to move ahead and rebuild the nation's infrastructure at all; for economic developers, however, the question is whether we can afford not to. At CUED's conference in Columbus, Ohio, panelists and participants echoed the concern of Michigan's Coordinator of Public Investment, Robert Mitchell. Mitchell urged local economic developers and public works officials to begin a marketing effort to persuade decision-makers that we are on the road to a bigger crisis unless action is taken now.

## Defining the problem

The nation's infrastructure shows signs of deterioration at a time when the historical sources of funding are being cut back. Rehabilitation requirements seem to continually outpace revenues, leaving public works officials to rely on a system of triage to address the problem. When a locality must choose between critical, essential and optimal, only those repairs that are absolutely critical get financed. But every year, as more and more of the nation's infrastructure reaches the critical level, the cities and states find it harder to keep up.

State and local economic developers view the problem as a potential obstacle to economic development, inhibiting the ability of states and localities to attract and keep businesses and jobs. Falling bridges, train derailments, unsafe water, clogged sewers, broken water-mains, overcrowded prisons and potholes all affect the cost of doing business and sustaining an adequate quality of life. While estimates of needs (which include capital, rehabilitation and operations and management expenditures) range into the trillions of dollars, state and city officials recognize the added costs of delay — increased public risk, decreased quality of life, inefficiency and missed development opportunities.

As the infrastructure problem continues, public works officials and economic developers search for ways to educate the public and policymakers and to encourage a more efficient and equitable process.

## Developing solutions

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land State University, has challenged economic developers and public works officials to consider the following six recommendations as a way to depoliticize the capital improvements process and to encourage a more efficient process:

1. Sort out and define appropriate roles;
2. Link economic development with infrastructure;
3. Link capital planning with capital budgeting;
4. Secure resources for construction, rehabilitation and maintenance;
5. Gain support from the business community; and
6. Modify government restrictions to utilize innovative and new technologies.

*Sort out and define appropriate roles.*

By defining the appropriate roles and responsibilities among and within jurisdictions, public works officials can reduce duplication of efforts and encourage a more efficient process. The public works process encompasses a multitude of disciplines and cuts across a variety of jurisdictions. How the process works in any one jurisdiction depends on who is involved.

The city of Columbus, Ohio, provides one example. At the federal level, practically every cabinet-level agency plays a part in state and local infrastructure by issuing mandates or providing financial or technical assistance. At the state level, public works in Columbus may come under the jurisdiction of a variety of agencies ranging from the Ohio Sewer and Water Development Authority, which provides financial and technical assistance to the Public Improvements Inspection Committee, which issues regulations and standards. Other organizations involved in public works include regional organizations, county government departments, and any special district authorities such as sewer, transit, park, education, and utility districts. And of course, local jurisdictions play a major role in the financing and maintenance of infrastructure services.

Created in 1976, the New Jersey Commission on Capital Planning and Budgeting has succeeded in consolidating efforts among competing agencies and has produced a more efficient and equitable public works system. After several years of poor bond ratings and defeated bond referendums, the legislature created this bi-partisan, public-private commission to review bond requests from all state agencies and to recommend action to the state legislature. In addition, the commission has created unified fund pools to address specific problems encountered by numerous agencies. For example, the commission recommended a consolidated account for asbestos removal after several agencies requested, separately, funds for this purpose. And the commission has recently suggested the construction of a co-located laboratory facility after several departments submitted separate proposals for a new facility.

*Link economic development with infrastructure.*

By linking economic development with infrastructure, localities can strengthen the decision-making process by emphasizing the importance of public works to job creation and retention. Recent studies have shown that infrastructure is an important factor in a firm's decision to relocate or expand. In addition, poor infrastructure services increase the costs of doing business and affect a locality's ability to sustain business and attract visitors.

The Iowa Office for Planning and Programming has developed a Public Facilities Set-Aside Program which uses federal community development block grant money to help communities support infrastructure improvements related to economic development. The set-aside program provides communities with grants to help pay the cost of public works such as street improvements, public water and sewer systems, community centers, fire and police equipment and property designated for industrial parks. The program specifies that the project must:

- Create or retain jobs, especially in cities or cities located in counties with an unemployment rate higher than the statewide average;
- Promote the expansion of existing business and industry;
- Leverage local resources equal to 50 percent of the amount loaned; and
- Create job opportunities for women and minorities.

*Link capital planning with capital budgeting.*

By linking capital planning and capital budgeting, jurisdictions can improve local decision-making and fiscal management of public works programs. What usually occurs at the state or local level is that the appropriate planning agency develops a capital plan which outlines long term capital improvements. Often, however, the budget process operates independently of the planning process and funding decisions are determined without consulting the plan.

The State of Washington's Public Works Trust Fund requires localities to develop a long-term financing plan which may consist of a capital improvement plan, a comprehensive plan, or a six-year road plan in the case of general fund-related projects. The program was established in 1985 to help local governments finance critical public works by providing loans at little or no interest. The trust fund is financed through dedicated tax revenues deposited in a special account and managed by the state Treasurer.

In 1982, the city of Fort Worth adopted a water and sewer fiscal policy which coordinates the planning and budgeting process. The city council, which directed the effort in order to be better informed to make financial decisions, set up a citywide capital improvements committee. The committee, made up of local homeowners, organizations, senior citizens, homebuilders, industrial developers, and others, meets regularly with appropriate water and wastewater subcommittees, which consist of water department staff. Twice a year the subcommittees meet with the directors of planning, budget and finance to reevaluate the five-year capital improvement program and to consider development trends in the city, the economy, system demands, maintenance records, and historical construction periods and costs. The result of these reevaluations and updates is a running five-year plan which is shared with the city council annually.

*Secure resources for public works.*

By securing a dedicated funding source for public works programs, jurisdictions can insure that infrastructure projects are not overlooked or forgotten in the competition for public funds. Historically, localities have depended on a combination of federal aide, debt financing and general revenue to finance public works projects. Because federal aid has declined through the 1980s and bond financing has become more prohibitive as a result of the 1986 Tax Reform Act, jurisdictions are searching for alternative revenue sources to pay for much-needed maintenance and rehabilitation of public works facilities. While income, property and sales taxes are the primary source of general revenue funds, localities are looking for alternative sources and better ways to administer these funds.

Trust funds are one technique that states are employing to earmark general revenue funds for public works programs. The State of Washington's public Works Trust Fund is financed through dedicated revenues from utility taxes on local water, sewer and garbage service and from a real estate transfer tax. In 1986, the Trust Fund made available $17 million in loans to localities for more than 40 public works projects.

Revolving loan funds are another method of securing ongoing resources for infrastructure improvements. The Ohio Water Development Agency administers a revolving fund program for local government sewer and water projects. Since its inception in 1969, the program has financed 435 projects with a total construction cost of more than $1.8 billion. The program attributes its success to the effective collection of repayments from local governments, uniform administration, simplified procedures for local government participation, and a fast-pay system for contractors.

User fees are an increasingly popular finance technique. Such fees are imposed on those who use a service in order to help defray the cost of providing that service and can include water and sewer charges, parking fees, road tolls, public transportation fares, legal fees, tuition fees and license fees. The Georgia Environmental Facilities Authority has developed a program to help communities accurately establish such fees. The Authority has prepared a rate database which contains a list of community user rates. In addition, the Authority developed a universal formula for compiling and reviewing rates and recently sponsored a workshop series on setting user charges.

Five states use lottery proceeds to fund infrastructure projects as an alternative to raising taxes or increasing user charges. The Oregon Lottery Public Works Program was established in 1985 and funded through a two-year appropriation of $18,202,000 from state lottery proceeds. The program provides grants and loans to local governments for infrastructure projects that promote the primary economic goals of the state.

Through special assessment districts, localities can isolate the financing of infrastructure that serves specific areas without burdening the residents of the city as a whole. In Colorado, state law enables cities and counties to establish special districts that can impose taxes, charge user fees, and issue bonds to finance specific projects or general infrastructure improvements.

Developer fees and exactions are private sector contributions toward the construction of infrastructure that directly benefits the development of a new facility. Local governments are using these fees to pay for the cost of growth they might otherwise not be able to afford. In Broward County, Florida, for example, developers are responsible for the impact of development on traffic capacity. Developers are required to either provide road improvements themselves, pay into a fund that supports the improvements, or postpone the project until road improvements are completed by the county. Developers are also required to donate land or to pay for recreational facilities and schools. (For more information on developer fees and exactions, refer to CUED's Information Service Report Number 43 on developer fees.)

Privatization is a form of public-private partnership in which the private sector takes a substantial role in public facility construction or operations. Increasingly, governments are investigating privatization as a way to increase efficiency and cut costs. In Los Angeles County, for example, cities have the choice of furnishing their own services, buying them from county government, or contracting for them from the private sector. And in Phoenix, Arizona, city employees, faced with the prospect of being privatized out of existence, are streamlining their operations to better compete with private firms in bidding for contracts.

Privatization can take the form of a sale of capital assets or an entire operation to the private sector. In Scottsdale, Arizona, the city pays a private company to provide fire protection. The company has saved the city $2.6 million and boasts better-than-average response times.

Another form of privatization involves the construction and acquisition of new assets. Auburn, Alabama, established the country's first full service privatized sewer treatment project. In December 1985, the first wastewater flows were treated, six months ahead of schedule. A second plant was in operation by the spring of 1986. The city hopes to save $25 million in capital costs over 25 years. Changes in the tax law may prevent private firms from using the tax write-off that made this type of privatization attractive. However, it is likely that the private sector will still find the privatization of public facilities to be a promising approach to public works finance.

*Gain support from the business community.*

The private sector can play an important role in the infrastructure process of educating the public and policymakers and participating in the capital improvements decision-making process.

An example of private involvement in planning and public education is AmeriTrust Corporation's report of the investment challenges faced by the Mid-American states of Ohio, Indiana, Michigan, Illinois, Wisconsin and Minnesota. The corporation recognizes that the first step in alleviating the infrastructure problem facing the public and private sectors is to educate the public and policymakers about the importance and magnitude of the problem.

Along those lines, the Associated General Contractors of America's Education and Research Foundation has developed a flexible mini-course designed for high school civics and current events courses. The course, entitled "The Infrastructure: An American Crisis," is intended to familiarize students with the current condition of infrastructure in the country and to highlight the importance infrastructure plays in daily living.

The private sector can also play a role in the capital improvements decision-making process. In Seattle, Washington, a 37-member committee of business people, private individuals and public officials has been established to identify and assess the public works and human service capital needs critical to the region's quality of life, and to organize a process that fosters their equitable and efficient resolution. The committee, King County 2000, is comprised of representatives from various geographic areas of the country. The preliminary report of the committee identified nearly $10 billion in expenditures for capital facilities by 2000, with only about half of that amount clearly identified to pay for those projects. The committee also recommended a decision-making process which is designed to deal with problems on a regional basis.

Michigan has been successful in making infrastructure a top priority, partly due to its success in gaining support from the private sector. In 1984, the Michigan Infrastructure Coalition, a private sector group appointed by the Governor, conducted hearings across the state to gather information about the condition of Michigan's infrastructure. Testimony from the hearings resulted in the following five-step process to rebuild Michigan's infrastructure:

1. Document current infrastructure investment. The Public Investment Task Force developed a computerized summary reporting current investment by county or legislative district. The Task Force developed a series of publications reporting current public investment information to the public and local officials.

2. Assess future infrastructure needs. The Task Force completed a projected ten-year infrastructure needs study, including the first capital needs study ever conducted in Michigan, for municipal water systems, community colleges, and K through 12 public education. The Michigan Infrastructure Coalition also analyzed needs and identified priorities for future public investment. These studies estimated $37.7 billion in needed investments over the next ten years. The study was broken down further into critical, essential and optimal investments. The critical needs, alone, were estimated at $12.8 billion.

3. Develop a long-range capital budget. Currently, the capital budget is still being formed.

4. Examine financing options. The Michigan Municipal Bond Authority was established, creating a $420 million pool of bond funds from which local governments can draw. Since the state's credit rating is generally stronger than that of small localities, the bond fund offers a way to reduce the cost of local infrastructure improvements.

The Authority is regarded by Wall Street brokers as one of the most flexible such programs in the nation, and among the most responsive to local government needs. In addition, Michigan is working on a ballot proposal for a bond issue for environmental concerns, legislation to increase transportation fees by $80 million, and a general fund under the revolving fund for Clean Water Act Compliance. Other financing methods are still under investigation.

5. Develop annual budgets. This process is dependent on the others and will be completed when the others steps in the process have been finalized.

*Modify government restrictions to utilize new technologies.*

Prohibitive building codes, poor design concepts and excess regulations all contribute to the high cost of capital construction. New technologies have been or can be developed to help cut the costs of capital improvements. Communities that can incorporate these new processes will realize additional savings.

More can be done to encourage and stimulate the introduction of cost-effective new technologies. Indeed, the perception among public works professionals is that technological innovations in the public works field lag well behind those in defense, healthcare and aerospace, even though current developments in engineering are capable of making significant contributions to the field. Expanded and accelerated research promises to make public infrastructure less expensive and more reliable.

Another step is to identify the impediments to technology transfer that hamper innovation. They exist at all levels of government. Bound by outdated regulations, restrictions and standards, public works officials are, in many instances, unable to apply the technological innovations that do exist. Government standards which prescribe how a facility should be constructed are mandated to ensure the safety and quality of these projects. Compliance with these standards, however, can add substantial costs without yielding commensurate benefits. Currently, while technological innovations in public works are being discussed throughout the country, no state or city has developed a program that encourages their application or modifies restructions to enable their use.

## Summary

The federal government, which has appropriated more than $100 billion for public works uses, has traditionally played a significant role in the public works process. Traditionally, however, the federal funds are often used as a counter-cyclical tool to overcome unemployment in the construction industry. In periods of high employment, the government tends to hold back on such expenditures so as not to compete with private industry. State and local governments, which have the most responsibility for public works maintenance and operations, are working towards a more efficient and cost-effective public works process.

## Case Study: Build Up Greater Cleveland

As in most older urban centers, Cleveland's infrastructure has suffered extensive, long-term deterioration. But Cleveland, unlike most urban centers, has developed an integrated program to rehabilitate its infrastructure system through a coalition of civic leaders and public officials working under the auspices of the Greater Cleveland Growth Association. It provides the best example of a local effort to establish and implement an infrastructure program.

In November 1981, Cleveland launched the Build Up Greater Cleveland Program. The program began with an inventory of needed investments identifying capital funding needs of more than $2.1 billion. The next step was to evaluate this inventory of needs against common criteria in order to reduce it to a manageable renewal program addressing the most critical infrastructure needs. A policy committee developed a common set of criteria to establish an overall ranking by order of importance; more specific project criteria were developed for each infrastructure area. For example, the criteria for roads and bridges were established in the following order of importance:

- Safety — Is the condition of the bridge or road so poor that rehabilitation is needed to avoid posting or closing the structure, or to reduce high accident rates on a particular highway segment?
- Intensity of use — Is the road or bridge a heavily traveled link in the transportation network? Does its poor condition create a major system bottleneck, increasing transportation costs for local firms?

- Necessity of the bridge or road link — Does it provide critical access to hospitals or schools? Is it a critical link in the highway network? Are there alternative routes or access points?
- Maintenance of existing facilities — Does the project focus on upgrading existing facilities rather than expanding the capital stock and increasing maintenance responsibilities?
- Cost-effectiveness of the project — Will it avoid more expensive rehabilitation later? Will it obviate the need for another project? Will it reduce maintenance responsibilities and costs?
- Linkage with public-private development plans — Will the project help industrial retention in the Cuyahoga River valley or development of the enterprise zone?
- Project readiness and sequencing — What is the status of the project with respect to completion of engineering and design, required environmental impact statements, prior commitments and related development projects that have gone forward? Which projects must be undertaken first before other planned improvements can move forward?

Based on this assessment, the policy committee adopted a scaled-back and stretched-out program of essential needs requiring investment of $1.56 to $1.66 billion over the ensuing five to six years.

The committee then turned to the issue of financing. Several financing options were identified for each infrastructure area including bonds backed by rate increases and revenues from the state, counties, and municipalities; loans; user fee increases; and property and sales taxes. The financing plans that were agreed to became the basis for a community capital investment strategy.

One of the program's major achievements was the development of a means for coordinating the public entities involved. All participants have agreed to continue working together through the implementation phase of the program. The program has helped to secure about $350 million in new funds for infrastructure. It recently helped to pass legislation in Ohio that would permit the counties to enact an additional license fee and target the new gasoline tax to include county and municipal governments.

In addition, the key role that the general public and private sectors played still remains critical to the success of the program. Walter T. Olson, director of Build Up Greater Cleveland adds, "since citizen support is the cornerstone of infrastructure renewal, implementation will require an effective local public information program. Professional help will be engaged. The story to be presented is clear and compelling: the renewal need is there; just look around. Local officials have worked out a plan together. The plan makes sense; the most urgent needs have priority. Further deferment of the work will only add to the cost; pay now or pay more later. It's where you live; do it for a better tomorrow."

# Infrastructure Budgeting:

## The Search for Rationality

*By Richard G. Sheridan and Christopher Hall*

Public decision-making requires melding a variety of opinions and positions on an issue into a negotiated compromise. When the public decision being made involves the allocation of resources there are usually three distinct components of the compromised position: program justifications, fiscal considerations and political ramifications. To arrive at consensus decision-makers will weigh each of these three factors.

A program may be completely justified in terms of need and still not be adopted because it is too costly or because it would be implemented in a district heavily populated by members of the political party not in control. It is the interplay of program, fiscal and political considerations that determines whether individual states and localities will meet what has been described as the nation's "infrastructure crisis."

A great deal has been written about the need to rebuild many of the nation's roads, bridges, water supply and sewer systems and public buildings — its infrastructure.[1] Congress studied the problem and concluded in 1984 that the nation's infrastructure rebuilding needs by the year 2000 total $443.9 billion.[2] President Reagan has appointed a National Council for Public Works Improvements to further define the problem and propose solutions to it. Individual states have appointed their own commissions to assess the magnitude of the problem. What each of these studies concludes is that states and localities, which have the primary responsibility for much of the nation's "infrastructure," have neglected their public infrastructure. It requires little more than a drive to almost any city's downtown to confirm the need to repair the streets, shore up sagging sewers and fix up decaying public buildings. The important public policy question is why the nation has allowed this degree of capital facility neglect.

### Reasons for Neglect

The first and most obvious response for those seeking to understand the failure of government to take care of its capital investment is that it simply can't afford it — for a variety of reasons. Intergovernmental assistance for capital improvements, particularly from the federal government, has declined, while states and localities have had difficulty raising money from their own sources for capital improvements. Declining economic conditions have contributed to this difficulty, leading to inadequate revenue production. In addition, interest rates soared during the early 1980s, and despite a significant fall several years ago, are again climbing. Because most capital projects are financed through the issuance of bonds, the interest rate is a critical factor in project affordability.

State and local taxpayer revolts have restricted the availability of property taxes to pay for capital improvements, requiring such improvements to compete with operating expenditures for sales and income tax revenues. As entitlement programs such as Medicaid, Aid to Families with Dependent Children and Title XX Social Services have grown, pressures have been put on state and local governments to put more responses into these programs instead of into unmatched capital improvements projects. Increasingly, policy-makers tout the advantages of "maximizing their resources" and "leveraging federal and private funds" as descriptions of their fiscal allocation priority choices. This results in federal matching programs being placed in a higher priority allocation status than projects which require 100 percent state or local financing.

But while these are all logical explanations for the failure to raise infrastructure reconstruction and maintenance to a high enough priority to become publicly "affordable," this may not be the complete story. New facilities are under con-

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struction throughout the country, and not just in the newer communities with growing populations and industrial installations. Why does there appear to be money to build new state office towers but not to fill potholes? How can a state afford a new state park or lodge but not find the money to rebuild a sewer system? Where does the money come from to pay for a new city hall while the bridges needed to get to that city hall are crumbling? Even though it can be shown that public capital improvements investment has declined, it can also be shown that there is more concern for constructing new facilities than for rehabilitating the old, and some kinds of capital improvements enjoy more favor than others.[3] One must conclude that there are other factors at work than just fiscal ones; there are program and political considerations involved as well.

## Program Considerations

Today's policy-makers are obsessed with encouraging economic development in their jurisdictions. Twenty years ago, offering a direct subsidy to a highly profitable business firm would have resulted in a public outcry; today, to deny it produces the same result. The more successful competitors for public funds have recognized the desirability of tying their program justification into economic development, usually quantified in terms of the number of jobs to be created by a new or an expanded program. Unfortunately, those seeking to convince policy-makers of the desirability of allocating resources for infrastructure improvements have failed to make a sufficiently compelling case by connecting infrastructure needs to economic development.

It can be argued that without infrastructure maintenance and reconstruction, additional growth and economic development, which increase the tax base of the city, cannot take place. As an example, when a city's wastewater treatment system is operating at 80 percent of capacity it cannot provide additional industrial load. According to a Department of Commerce survey report, 50 percent of current wastewater treatment systems are operating at 80 percent of capacity or higher in older cities such as Boston, Buffalo and New Orleans.[3] This means these urban cities are in a no-growth status. Similarly, many of the nation's local transportation systems are poorly maintained and inadequate to handle expanded use. These systems are vital to industrial and business accessibility and to local expansion potential. More convincing arguments must be made to establish the validity of the linkage in the minds of public decision-makers if capital projects are to compete in the fiscal allocation marketplace.

Those arguing the case for infrastructure investment may also have raised problems in the minds of policy-makers by exaggerating the size of the problem or, if it is not exaggerated, by leaving the public with the opinion that the problem is so staggering as to be fiscally insurmountable and one needn't even bother to seriously attack it.

Frequently, many of the described infrastructure needs are not supported within the framework of a usable capital plan. And when there is a capital plan it may not be supported by needed information on how projects will be financed, how debt will be repaid, and how operating and maintenance costs will be provided. There may not be a capital budgeting process and, if there is, it may not be integrated with the capital planning process. This problem will be discussed further when considering how public decisions can be influenced toward infrastructure projects.

## Political Considerations

The rehabilitation of existing buildings, repair of roads and streets or construction of a new sewer system simply do not have the same political pull as a new state park or city hall. Pointing to a repaired water main as evidence of accomplishment will not carry as much political punch as pointing to a new fire station, especially if it happens to be named after the politician who "honchoed" it through the legislative halls. The short-term horizon of the political environment places a high priority on visible new construction.

Another political problem results from the multiplicity of jurisdictions and agencies involved in infrastructure planning, construction and financing. Most state and local jurisdictions have failed to assign functional responsibility for infrastructure to a single organization. At the very least there is a shared responsibility between a central budget office and a public works office. In Ohio, as an example, there are 12 state agencies involved in various aspects of infrastructure.

Besides the multiplicity of jurisdictions there are also different levels of government involved — federal, state, county, city and special district — without a clear delineation of the appropriate role for each.

## Summary

With three different systems operating in the public decision-making environment, there are three major infrastructure problems requiring solutions. These are summarized in the following chart:

| System | Problem |
|---|---|
| Fiscal | Affordability |
| Program | Economic Justification |
| Political | Lack of Political Rewards |

Suggestions have been made that the infrastructure problem could be solved through improved capital planning or the earmarking of a revenue source to provide an ongoing funding stream for infrastructure maintenance, repair and construction.[5] Would either or both of these be of assistance?

## Capital Improvements Planning

In March 1986 a survey was sent to officials in 963 local jurisdictions throughout Ohio for the purpose of analyzing the expected impact of federal funding cuts on local governments. An excellent response rate resulted in 395 returns from counties, cities, villages and townships throughout the state. One of the questions asked whether the jurisdiction had a long term capital improvements plan. Of the 257 jurisdictions responding to this question, only 63 indicated that they had a plan, and most of these were cities. (Among the 89 cities responding almost half reported that they had a plan.) An analysis was made of the spending patterns of 87 cities in the survey using reports filed with the Auditor of State. The analysis was done to determine whether there is any significant difference in capital spending between jurisdictions with and without capital plans (Too few of the other types of jurisdictions reported having plans to make an analysis worthwhile). The results of the analysis are portrayed in Table 1.

**Table 1: Comparison of Spending in 1984 in 87 Ohio Cities With and Without Capital Plans**

| Percent Capital Expenditures Compared to Total Expenditures | Cities With Capital Plan | Cities Without Capital Plan |
|---|---|---|
| Average | 15.0% | 13.2% |
| Median | 12.4 | 8.9 |
| Range | 2.0-55.8 | .0-39.5 |
| Number | 40 | 47 |

Based on a comparison of the percentage of total expenditures used for capital improvements for cities with and those without long range capital plans, it would appear that having a capital plan makes some difference, because those cities with a plan devoted a slightly larger share of their total resources to capital improvements. However, when subjected to an analysis of variance procedure, the variance explained by the presence of a capital plan was insignificant (testing at the 0.05 level of probability, the significance level of the statistic was 0.27). One may conclude that, by itself, the presence of a capital plan is not highly rated to an average city's commitment to capital spending.

## Capital Budgeting and Other Suggested Solutions

There are other ways of trying to insure that appropriate attention is paid to infrastructure problems. A frequently mentioned suggestion is the adoption of a capital budget.

A capital budget requires the discipline of assessing the long-range capital improvement needs of a jurisdiction. By considering a capital budget separately from the operating budget, independent judgments can be made about the desirability of proposed projects without coming into conflict with what may be higher priority operating spending needs.

However, even the existence of a separate capital budget does not ensure that sufficient resources will be made available to meet identified capital needs. The operating budget must allocate, or at least reserve, those moneys necessary to make annual payment for capital projects, including requisite debt service payments for the costs of principal and interest. Yet, if such moneys are not earmarked for specific capital uses, decisions about allocating the moneys may more likely favor operating expenditures over capital expenditures, for several reasons. First, cuts in operating expenditures (current programs) are likely to have more immediate and politically damaging results than cuts in capital expenditures. Second, with the separation of capital and operating budgets, decisions on reserving debt service amounts in the operating budget are predicated upon incomplete information about future capital needs. This may adversely affect funding for capital projects that would be financed from the lump sum of reserved debt service payments.

In addition, finding ways of increasing private participation in public projects could increase the resources available for capital projects. This alternative has become more attractive for many communities as they try to cope with the costs of building or rehabilitating capital facilities.

Alternative mechanisms can be considered to "de-politicize" the capital improvements decision-making process. The Urban Institute, for example, has shown that where sewer and water systems are taken out of the general budget process, and entrusted to independent authorities or put on a full enterprise fund basis, the capital stock conditions of the systems are superior; greater attention is given to maintenance; and more regular capital replacement and repair plans are followed. This would suggest that capital budgets for those systems could be stabilized if sewer and water service delivery were reorganized as an independent utility function.[6]

In the final analysis, however, the infrastructure problem is one of getting public decision-makers to reallocate budget priorities to provide greater emphasis on capital preservation and investment. Placing a firm claim on resources can assist in this process and so can the creation of special authorities to take spending outside the general budgetary process. The establishment of a capital plan can focus public and representative attention on the infrastructure issue. Ultimately, however, a jurisdiction is likely to consider its operating needs first and, only afterwards, consider its capital needs, barring a major catastrophe such as the collapse of a bridge. As a test of the importance of total resources available relative to capital expenditures, we examined the spending patterns of 204 U.S. cities with more than 25,000 residents to see if there is any relationship between their revenues and their capital spending. These are the results.

## Capital Spending as a Function of Revenue Availability

In the spring of 1986, Dr. Michael A. Pagano, National League of Cities' Lincoln Government Fellow, mailed a survey to 1,404 local officials from 234 randomly selected cities across the U.S. Of that number, 204 had populations greater than 25,000 and 30 had populations less than 25,000 people.[7] One of the questions asked was whether the city dedicated (earmarked) any of its revenues for exclusive use for capital projects. The specific responses to this question were made available for our further analysis.

The spending patterns of the 195 cities responding to the question were examined in order to test two hypotheses:

1. Cities with dedicated revenues will spend more of their resources on capital projects.

2. Cities with more resources to spend will be more likely to spend more of their total on capital projects than those with less to spend.

Phrased differently, the review is intended to see if there is any significant relationship between the dependent variable (the percentage of total spending for capital projects) and the independent variables (earmarked and total spending). For purposes of this analysis, spending for 1981-82 and 1984-85 as reported by cities to the U.S. Bureau of the Census was used.[8]

Table 2 displays the level of per capita capital and per capita total spending in 1981-82 and 1984-85 for 91 of the 195 sampled dedicated and non-dedicated revenues cities (only this sub-sample of 91 cities, which have populations greater than 50,000, are compared in this table due to census data limitations.) The data shown here do not indicate that any meaningful changes in the level of commitment to capital spending occurred within this time frame. Capital and total expenditures grew at comparable rates over the time period (29.3 and 27.6 percent, respectively). In addition, capital spending as a percentage of total spending hovered near 16 percent in 1981-82 and 1984-85. Yet, although it appears that this 3-year temporal frame did not, by itself, have a strong effect upon overall commitment to capital spending, the dedication of one or more revenue sources to capital spending might have had pronounced effects upon this commitment.

Table 3 shows variations in the level of committment to capital spending between cities with and without dedicated revenue sources for the group for 1981-82. It can be seen that per capita spending is higher in the dedicated fund cities. It can also be seen that, on average, the dedicated fund cities spend more resources in capital projects than the non-dedicated fund cities. The aver-

**Table 2: Spending for Sampled U.S. Cities Over 50,000 in 1981-82 and 1984-85**

| TYPE OF SPENDING | 1981-82 | 1984-85 | PERCENT CHANGE |
|---|---|---|---|
| Per Capita — Total Expenditures | $580 | $740 | 27.6 |
| Per Capita — Capital Expenditures | $92 | $119 | 29.3 |
| Number of Cities | 91 | 91 | |
| Capital as a Percent of Total Expenditures | | | |
| Mean | 15.9% | 16.1% | 1.3% |
| Median | 16.3 | 14.6 | (10.4) |
| Range | 1.0 - 44.0 | 0.3 - 48.1 | |

**Table 3: Comparison of Spending in 1981-82 for Reporting U.S. Cities According to Whether They Dedicate Funds for Capital Purposes**

| | Cities Reporting Dedication | Cities Reporting No Dedication |
|---|---|---|
| Per capita — total expenditures | $530 | $508 |
| Per capita — capital expenditures | $127 | $76 |
| Number of cities | 42 | 153 |
| Capital as a Percent of Total Expenditures | | |
| Average | 22.0% | 15.3% |
| Median | 19.8 | 14.1 |
| Range | 2.2-61.7 | 0.0-59.9 |

age, median and range of the percent of total expenditures devoted to capital projects is also shown in Table 3.

Statistical analysis was performed to determine the validity of the hypothesis that the dedication of revenues for capital projects is significantly related to capital spending commitment. An analysis of variance procedure was used with the 1981-82 data for the 195 cities in order to test this hypothesis. The procedure generated a statistical result which prevents us from rejecting the assertion that a relationship exists between the proportion of city expenditures used for capital purposes and the dedication of revenues for capital purposes. Similar statistical tests were conducted using 1981-82 and 1984-85 data for the subsample of 91 cities which exceeded 50,000 in population, and this also yielded an affirmation of the hypothesis. It appears reasonable to accept the proposition that there exists a relationship between dedication of revenue and commitment of resources to capital spending.

We must also consider the second hypothesis posed above — that a relationship exists between the level of a city's total per capita expenditures and its commitment to capital spending, as shown through the percentage of total resources devoted to capital purposes. Analysis of variance was again used on the 195- and 91-city samples to evaluate this hypothesis. These procedures generated statistics which indicate that the hypothesis cannot be accepted. That is, we may tentatively conclude that the level of spending by the average city does not affect the proportion of resources it devotes to capital projects.

These results could open up an avenue for further research since it appears to identify at least one factor that could be exploited by those seeking to find ways of addressing the nation's infrastructure problem, which is in large part a problem of financial resource allocation. Certainly, more research will be required to gain a more thorough understanding of capital spending. Nevertheless, it does appear that at least one of the two factors considered here is important to overcoming the budgetary bias toward satisfying operating expense needs first.

## Conclusions

Assuming that the infrastructure problem is real, and there is every indication that it is, then its solution depends upon the expenditure of more resources than are currently being expended on capital improvements. It also will require that resources be directed to a greater extent to the repair and rehabilitation of the specific capital projects which are part of a jurisdiction's infrastructure. Allocation decisions are ultimately political decisions with fiscal and program components. If a capital plan is prepared in a jurisdiction it will provide greater visibility to capital needs, but it is not likely that, by itself, a plan will guarantee a greater allocation of available resources. The evidence from a limited review of 87 Ohio cities shows that there is no statistical validity to the hypothesis that a plan makes much of a difference in spending allocation decisions.

Certainly one could expect that if a specific revenue source, or portion of a revenue source, is dedicated exclusively to capital construction, then this would enhance the chances that a jurisdiction would allocate resources for capital improvements. However, if it was not already determined that certain capital projects should be undertaken, there are ways to redirect resources to circumvent the intent of those responsible for the dedication of capital funds. For example, certain kinds of equipment, like automobiles, trucks and data processing equipment, which would ordinarily be financed from operating revenues, could be shifted to the capital expenditure accounts. Also, unless the language of the dedication refers specifically to the rehabilitation of defined infrastructure, then the dedication might result in the continued construction of new facilities.

The same concerns can be expressed about the use of a capital budget. Although this has not been subjected to empirical analysis, it is entirely possible that the existence of a capital budget would be no more of a guarantee of increased infrastructure funding than a capital plan. What, then, is the most likely capital funding driver?

The cities studied by the Urban Institute indicate that so-called "depoliticization," through the use of independent authorities with dedicated revenue sources, can lead to greater spending on infrastructure needs. The Institute study also suggests that the most critical factor is affordability. However, although it might be expected that the higher the per capita revenue, the higher the per capita capital spending, this does not ensure that a greater relative committment to capital spending will occur, as shown by the analysis undertaken here. As confirmed in a recent study of infrastructure finance issues, local budgeting involves tradeoffs between operating and capital needs. When the choice is faced, operating needs tend to be met first and then whatever remains is allocated to capital projects.[9]

Those seeking to solve the nation's infrastructure problem could probably enhance their chances of success by seeking to identify a new revenue source that can provide a steady flow of revenue, and getting it dedicated exclusively to the kinds of rehabilitation projects that will rebuild and maintain existing highways, roads, bridges, water mains and sewers, and relevant public buildings. This would prevent the kind of backlog of projects that currently exist from occurring in the future.

## Notes

1. Attention was drawn to the issues in Pat Choate and Susan Walter's book, *America in Ruins*, Washington, DC: Council of State Planning Agencies, 1981. Soon thereafter the media focused on the problem in such articles as "State and Local Government in Trouble," *Business Week Special Report*, October 26, 1981. Other works of interest include: U.S. Joint Economic Committee, *Hard Choices: A Report on the Increasing Gap Between America's Infrastructure Needs and Our Ability to Pay for Them*. Washington, DC: U.S. Government Printing Office, February, 1984; U.S. Joint Economic Committee, *Infrastructure: A National Challenge*. Hearing before the Subcommittee on Economic Goals and Intergovernmental Policy, February 29, 1984. Washington, DC: U.S. Government Printing Office, 1984; State of Colorado, *Colorado: Investing in the Future, the Final Report of the Governor's Blue Ribbon Panel*, 1981; and State of Washington, Planning and Community Affairs Agency, *The Washington State Public Works Report*, December 1983.

2. U.S. Joint Economic Committee, *Hard Choices: A Report on the Increasing Gap Between America's Infrastructure Needs and Our Ability to Pay for Them*. Washington, DC: U.S. Government Printing Office, February 1984.

3. There is considerable evidence to show that the public commitment to capital facilities construction has been declining. An unpublished report by Dean Witter Reynolds Inc., *Solutions in Action: Case Studies in Infrastructure Financing*, in 1983 notes that in the 54 years between 1925 and 1979 the gross stock of fixed capital owned by state and local governments grew from $36 billion to $1.8 trillion, thus indicating a considerable increase in public capital spending. In 1935 the average age of all structures was 15.5 years. In 1979 it had increased by 33 percent to 20.1 years. According to the report this provides some evidence that the nation is falling behind in renovation, replacement and expansion of capital facilities. Additional moneys are being expended on new construction instead.

Other evidence of the decline in public infrastructure commitment is found in the reduction in the portion of the gross national product going to such investments. According to Dean Witter, in 1968 it was four percent but it had declined to 1.89 percent in 1983.

In 1960, capital investments accounted for a quarter of state and local spending. It declined to 14 percent in 1976-77 and then, even further, to ten percent in 1983-84 (See Richard Sheridan, *Governmental Responses to the Infrastructure Crisis*, paper prepared for delivery at the Region VI Conference of the American Society for Public Administration, Madison, Wisconsin, November 5-7, 1986).

On a per capita basis spending by state and local governments dropped from $183 per person to less than $96 in 1983, a 47.5 percent decline (See Sheridan, *supra*).

4. As quoted in Lehman Brothers, *Public Infrastructure: Problems, Priorities and Financing Alternatives*. New York: Lehman Brothers KuhnLoeb, Inc., 1983.

5. See for example, Peggy L. Cuciti, *Planning for Infrastructure: A Handbook for State and Local Officials*. Denver, Colorado: Graduate School of Public Affairs, University of Colorado at Denver, 1985; and Michael A. Pagano, *How the Public Works; Major Issues in Infrastructure Finance*. A Policy Working Paper of the National League of Cities. Washington, DC: The National League

of Cities, September 1986.

6. George E. Peterson and Mary John Miller, *Financing Infrastructure Renewal: Policy Options*. An Urban Consortium Policy Paper. Washington, DC: The Urban Institute, December 1981.

7. Michael A. Pagano, *How the Public Works; Major Issues in Infrastructure Finance*. Washington, DC: The National League of Cities, September 1986.

8. U.S. Bureau of the Census. Census of Governments — 1982, *Finances of Municipal and Township Governments*. Washington, DC. Table 18.

9. Pagano, p. 25.

# The Future of Public Works Improvements

## Courage and Caution in an Age of Limitations

*By Nancy Rutledge*

*The following is taken from a speech delivered by Rutledge at the infrastructure colloquium.*

National commitment to improving and expanding the public works infrastructure faces a major crucible in the next few years. While the immediate questions of how much it should cost and who shall pay are in the forefront of public works debate, these are only reflections of a much broader and deeper reckoning of our nation's capacity to respond to a rapidly changing world. Indeed, the value of the 575,000 bridges, 3.8 million miles of streets, roads and highways, and 73,500 water and sewage treatment facilities is too great to our safety and economic survival to abandon.

The Congress, recognizing the importance of public works to our country's stability and advancement, established the National Council on Public Works Improvement in 1984. At that time, the Congress directed the Council to confront these challenging issues:

- the age and condition of public works;
- methods and trends used to finance public works improvements;
- the capacity of public works to support a sustained and expanding economy; and
- maintenance needs and projected expenditures for public works improvements.

As part of its legislative mandate, the National Council on Public Works Improvement is comprised of a five-member Council appointed by the President and the Congress. Representing the private and public sector, the Council members include:

- Joseph M. Giglio, Chairman, managing director of the investment banking firm of Bear, Stearns & Co., Inc. in New York.
- Honorable Freeman Holmer, city councilor for Eugene, Oregon. He served previously as director of Finance and Administration for the State of Oregon and as director of Environmental Protection for the State of Wisconsin.
- Frieda K. Wallison, attorney and partner of Jones, Day, Reavis & Pogue in Washington, D.C. She served previously as the first executive director and general counsel of the Municipal Securities Rule Making Board and special counsel at the Securities and Exchange Commission.
- Peter C. Goldmark Jr., group vice president of the Times-Mirror Company. He was formerly the executive director of the Port Authority of New York and New Jersey. He also served as vice chairman of the Infrastructure Advisory Committee which produced the study, *Hard Choices*, for the Congressional Joint Economic Committee.
- Lowell B. Jackson, executive director of the Colorado Department of Highways in Denver, Colorado. He is also the chairman of the Transportation Research Board, a component of the National Research Council.

The National Council on Public Works Improvement's mandate also created a 12-member Advisory Group of top level public officials to assist and advise the Council:

Secretary John Marsh of the Army, Chairman of the Advisory Group; the Secretary of Agriculture; the Secretary of Housing and Urban Development; the Secretary of Transportation; the Administrator of the Environmental Protection Agency; the Secretary of Commerce; the Chairman of the National Governor's Association; the President of the National Conference of State Legislatures; the President of the National Association of Counties; the President of the National Association of Regional Councils; the President of the National League of Cities; and the President of the United States Conference of Mayors.

In September 1986, the

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National Council on Public Works Improvement, fulfilling its legislative mandate, released to the President and the Congress its first report, *The Nation's Public Works: Defining the Issues.* With more than 9,000 copies distributed in just nine months, it is a reconnaissance of current public works research and policy questions.

Four themes emerged from the first study: needs studies; new technologies; economics and finance; and management practices and decision making.

**Needs studies:** While various analyses in recent years have pointed toward a major gap between public works needs and available funding, the definition of needs and the methods of projecting them into the future have generated great controversy. All needs are not created equal nor do we realistically have the ability and willingness to pay for them. The council has begun a process to develop new methodologies that will help decision makers consider the question of "need."

**New technologies:** Technological innovations, including new materials and construction methods, hold promise for improving the safety and productivity of public works. But, in general, research and development in this critical area has been scarce compared to medicine, space exploration and defense. Other problems also inhibit innovation, such as liability issues, special interest opposition or lack of knowledge by decision makers. The Council intends to work cooperatively with numerous organizations and institutions to help stimulate innovation and expand research and development.

**Economics and finance:** Public works is important to the nation's growth and its ability to compete in the world market. It also affects the competitive position of individual states, localities and businesses. The quest to finance public works has often focused on federal grants or innovative debt instruments rather than the more basic question of who should pay — federal, state or local government, the private sector, or individuals. In the face of staggering federal deficits, taxpayer rebellions and an uneven business economy, there are no easy answers or deep pockets. A more stable and equitable blend of all sources is probably in order. The Council will explore spending priorities and resource allocations as well as more technical question relating to financing mechanisms.

**Management practices and decision making:** Irrespective of money or technology, our nation's infrastructure still depends on people — elected, appointed and technical staff — making thousands of decisions every day on the condition of their systems. These decisions are generally a complex interplay of politics and management, but the basic decision-making tools need continual sharpening and development. The Council intends to examine potential improvements in a variety of decision support systems.

The National Council on Public Works Improvement is now in the midst of its second phase of research, which includes nine categorical studies and 14 cross-cutting studies. Released to the President and the Congress in early June, the categorical studies analyze documented needs, new technologies, the roles of governments, the linkage between public works and the economy, privatization, finance and international competitiveness. The studies include roads, highways and bridges; mass transit; airports and airways; intermodal transportation; water resources; water supply; wastewater; hazardous waste; and solid waste.

Each infrastructure category has a major working group of national experts and local practitioners who met regularly to test and critique the research findings of each category.

The cross-cutting studies include:

- Infrastructure and the economy;
- Survey of state aid to local governments to support public works;
- Special districts and authorities in public works provision;
- The effect of tax reform on public works financing options;
- Dedicated revenues for public works projects;
- How other nations use public works for economic development purposes;
- A consolidated performance report on the nation's public works;
- Public works decision making and information needs;
- Accommodating diverse views on public works projects;
- Economic growth activities;
- Demand analysis and decision-making;
- Problems of small systems;
- Good public works practices; and
- Adequacy of infrastructure.

In the final analysis, the Council's mandate is to report to the President and the Congress on the state of the nation's infrastructure. To achieve this goal, the Council believes that the true answers come from those public and private sector practitioners who have firsthand knowledge of and experience in infrastructure issues.

The Council has an aggressive outreach program to give its work-in-progress as much visibility as possible and to receive input from the broad range of public works experts. The Council actively solicits comments on all research by giving public presentations, hosting workshops and hearings, and disseminating all published documents to an extensive list of interested parties.

The outcome of this work will form the crux of the Council's final report scheduled for release in December 1987. The Council's goal is not to produce another federal report that collects dust on the shelf. Rather, it is to offer an objective, workable strategy for improving the nation's public works. Such a bold undertaking can only be accomplished with the input of public and private sector experts who deal with these issues regularly.

# Public Works Management Education:

## The Third Response To The Plight Of Public Works

*By William R. Dodge, John Hemann and Michael Spicer*

The news is marginally encouraging regarding financing for the current infrastructure crisis in the Cleveland region, the state of Ohio, and the nation. Regrettably, the news is discouraging about having sufficient numbers of trained public works professionals to use that financing effectively and to help prevent future infrastructure crises.

### Marginally Encouraging News

The encouraging news is illustrated by the experience of the Build Up Greater Cleveland program (which is described in "Repairing Greater Cleveland's Infrastructure," page 32 of this issue), is jointly financed by public works agencies and private foundations and receives administrative support from the Greater Cleveland Growth Association.

The Build Up Greater Cleveland program was created soon after the publication of the now-famous exposé *America in Ruins: Beyond the Public Works Pork Barrel.*[1] In their book, Pat Choate and Susan Waller conclude that the deterioration of America's stock of public facilities is strangling the nation's capacity to support renewed economic growth and provide basic community services.

Simultaneously, local public and private leaders reached a similar conclusion that the state of this region's public works was creating a "potential danger to greater Cleveland's economic turnaround."[2] By late 1981, the Cleveland leaders had committed to preparing a community capital investment strategy. Preparing the strategy involved compiling an inventory of the public works in Cuyahoga County, assessing the condition and future need for these and new public works, examining alternatives for financing public works, and adopting a strategy for meeting critical infrastructure needs.

The **first response** in Cleveland and other metropolitan areas was to document the extent of the plight and to develop a strategy for addressing the critical and growing unmet infrastructure needs.

With a strategy in hand, the leaders of the Build Up Greater Cleveland program began to inform the public on the importance of public works through presentations by a speaker's bureau, newsletters and other public education techniques. They also began to lobby federal, state and local governments to increase their investments in critical public works. Over the last four years, program leaders estimate that an additional $350 million has been invested in roads, bridges, sewer, water and transit systems in Cuyahoga County, due in some part to the coordinated efforts of the public and private agencies participating in implementing the community capital investment strategy.

The **second response** in Cleveland and other metropolitan areas has been to increase public awareness and to attract new financing for maintaining existing facilities and building new public works to promote growth and development.

The efforts of the Build Up Greater Cleveland program and others nationally have not met all of the current public works financing needs but have advanced a number of consensus strategies for meeting them.

### Discouraging news

The discouraging news is illustrated by the Build Up Greater Cleveland program's current concern about sustaining public interest in making adequate investments in

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public works until the current backlog of infrastructure needs is met, and until an adequate number of practitioners is available to prevent the occurance of future facility crises.

The **third response** that is evolving in Cleveland and other metropolitan areas is to build the capabilities of public works practitioners and the capacities of the agencies, consulting firms, investment institutions and other organizations involved in planning, financing, constructing and maintaining public works.

Building capabilities requires adding academic partners to the public agencies and private businesses involved in the first two responses. At Cleveland State University, the Colleges of Engineering and Urban Affairs have already been playing a key role in addressing infrastructure needs. The Department of Civil Engineering in the College of Engineering has trained many of the engineers and managers in the public works agencies and consulting engineering firms in the Cleveland region. The Urban Center in the College of Urban Affairs has been conducting research, providing technical assistance, and sponsoring seminars for public and private officials, including activities that focused on infrastructure issues.

This third response also recognizes that management demands have been growing in public works agencies, while experienced managers have been aging and will be retiring in record numbers, as documented in the recent report of the National Council on Public Works Improvement:

> Public works managers and staffs are a key resource in meeting infrastructure needs. However, they face important challenges.
>
> Among these challenges is the increasing perception that public works are a means of achieving a variety of environmental and economic objectives over and above the direct benefits of individual facilities. Public works managers must not only cope with a wide spectrum of engineering and technological issues and advanced management information systems, but also with creative finance, intergovernmental relations, the arts of negotiation and conflict resolution, a significant shift from construction to long-term maintenance and management of assets, and much more.
>
> Another challenge appears to be the likely diminution in the ranks of professional public works managers. For example, approximately one-third of the professional engineers in state and county transportation departments (the most senior professionals) are expected to retire within a decade. At the same time, the supply of civil engineers is projected to be declining.
>
> The Council believes that serious attention should be given to the need to replenish the ranks of public works personnel and assure that they are adequately prepared to perform effectively in the public policy environment of the future.[3]

Surveys of the American Public Works Association also confirm this aging process. In 1970, more than over one-third (37.9 percent) of the public works directors surveyed had less than three years tenure in their positions and more than one-third (37.6 percent) had four to nine years tenure. By 1980, only 6.2 percent of the directors had less than three years tenure in their positions and almost three-quarters (73 percent) had four to nine years. It appears that much of the turnover that was occuring during the 1960s slowed down with the aging of the public works professional work force in the 1970s.

In addition to rapid aging of public works professionals, the backgrounds of public works directors are undergoing rapid change. Again, according to surveys conducted by the American Public Works Association, approximately three out of five of the public works officials had college degrees in 1970 and 1980 (58 percent to 62 percent). In 1970, half of the directors (50 percent) had degrees in civil engineering and only one in ten (9 percent) had graduate degrees. By 1980, less than two out of five (39 percent) had civil engineering degrees and more than twice as many (19 percent) had graduate degrees. A similar decline occurred in public works directors who are professional engineers, from 66 percent in 1970 to 52 percent in 1980.

Public works directors now come from a number of disciplines, especially engineering but also public administration, business and finance, and law. This shift is also illustrated in many of the recent position announcements for public works directors which consider candidates with backgrounds in public administration and other related disciplines as well as civil engineering. The market for public works directors is changing its requirements, either in reaction to the shortage of available professionals or to attract professionals who have the combination of technical and management skills deemed necessary to address the current plight of public works and to prevent future crises.

Various states — such as Massachusetts and Oregon — have established programs to build the capabilities of public works agencies by providing training, technical assistance and planning support to public works agencies. Other states — such as Ohio — are considering earmarking part of the funds made available through public works financing programs for support of training and technical assistance. Such earmarking emphasizes the need to nurture skilled practitioners so as to use scarce capital resources efficiently and effectively. Finally, some states — such as California, Michigan, New York and Ohio — and various metropolitan areas are designing long-term strategies for addressing present and future public works needs, and some universities — such as the University of Oklahoma and Oklahoma State University — are recommending the creation of infrastructure institutes to guarantee a continuing focus on public works needs.

In sum, this third response of states, metropolitan areas and universities is attempting to institutionalize "an infrastructure for infrastructure management."[4]

## Cleveland State University's Response

As interest began to grow in this response, the Colleges of Engineering and Urban Affairs at Cleveland State University decided to examine how their teaching, research and public service activities could contribute to improving public works in the region, across the state, and nationally. Together, they successfully competed for a Selective Excellence program grant from the Ohio Board of Regents to conduct a feasibility study during late 1986 and early 1987.

The process of examining the feasibility of establishing a public works management program included:

- creating an advisory committee of faculty and representatives of public works associations to guide the feasibility study;
- conducting seminars with local and national public works practitioners and educators;
- conducting a marketing survey of the potential students and supporters for a public works management program;
- holding a National Workshop on the Role of the University in Public Works Management.

The remainder of this paper presents the findings and conclusions from the feasibility study and the recommendations for establishing a public works management program at Cleveland State University.

## Historical Perspective

Past public works management programs have provided an excellent precedent but future public works management programs need to consider new models. The first public works program at the University of Pittsburgh was launched with considerable funding, students and success.

The American Public Works Association, through its Education Foundation, sponsored the first in a series of public works management programs at the University of Pittsburgh in 1967. Called the Graduate Center for Public Works Engineering and Administration, it was a collaborative enterprise of the Graduate School of Public and International Affairs (GSPIA), the School of Engineering and the Graduate School of Public Health.

The basic goal of the program was to "prepare engineers with high growth potential for advanced administrative responsibilities by providing those analytical tools, skills, knowledges and insights for a career of professional growth."[5] In addition to the APWA Education Foundation, initial financial support was provided by federal and state governments and the various local governments sponsoring individual students.

A student could earn a master's degree in public works in GSPIA and at the same time work towards a second degree in the other two schools. The curriculum for the program was a public works core with electives chosen from the participating schools. The core included three courses especially developed for the public works degree: public works management theory; public works management practice; and system analysis for public works. The curriculum presumed that the students were mid-career public works officials on full-time study and that they had some background in engineering, primarily civil engineering.

In the first ten years of the program, approximately 150 public works officials graduated from the program. In an evaluation conducted by the University of Pittsburgh, more than 80 percent of these graduates believed that the program contributed to their professional development; 90 percent of the graduates would recommend the program to aspiring engineers; and only 27 percent would recommend an advanced degree in engineering alone. The University of Pittsburgh program served as a model for subsequent master's degree programs that were supported by the American Public Works Association.

Between the inception of the University of Pittsburgh program and the present, the APWA Education Foundation has assisted in the development of at least six other public works management programs modeled after the University of

Pittsburgh program. The most recent program at North Carolina State University will offer two closely allied degrees through the collaboration of the Department of Civil Engineering and the Department of Political Science and Public Administration: a master of civil engineering with a co-major in public affairs and a master of public affairs with a co-major in civil engineering.[6]

In addition, the APWA Education Foundation developed standards for master's degrees in public works which were endorsed by the National Association of Schools of Public Administration and Affairs and the American Society of Civil Engineers. Finally, the American Public Works Association and the American Society of Civil Engineers prepared a handbook on establishing university centers and programs of public works management.[7] Most of the public works management programs enjoyed early success, but have encountered funding, student, and other problems that have limited success during the 1980s.

At the University of Pittsburgh, only about 30 students were graduated in the second ten years. The program has been totally absorbed by the College of Engineering and the interdisciplinary public works core courses are no longer offered. The reasons cited for the decline of the program include "municipalities could no longer afford to release key personnel for a one year period due to budgetary problems, the University began to decrease its support of the program for similar reasons, a national consciousness on the importance of public works did not develop, and organized research support did not materialize. Interestingly enough, in recent years a majority of the public works students are from the developing countries who do see public works as crucial to their economic development."[8]

Most of the other public works management programs are encountering similar problems. It has been extremely difficult for them to sustain funding and students after the first few years of the program and almost impossible upon the departure of the individuals who initially "championed" the establishment of the program. Most of the programs have less than a dozen students, little faculty interest, insufficient funding and, consequently, limited present success. New public works management programs pursue teaching, research, and public service roles, involve various "champions," and secure university, student and outside supporter commitments.

New public works management programs with these characteristics are beginning to be established. For example, the Institute for Transportation Systems at the City University of New York was established in 1984 "to provide a broad range of transportation research, training and policy analysis at the local, state, regional and federal levels, as well as with commerce and industry."[9]

The Institute has a full-time director, eight regular faculty members, and draws upon faculty from the Departments of Management, Urban Planning, Business Administration, Public Administration, Marketing/Economics and Architecture in addition to the College of Engineering in which the Institute is housed. The activities of the Institute are overseen by a policy council composed of representatives from the participating City University institutions and an advisory committee of public works practitioners.

The Institute was started with a special $250,000 appropriation from the New York Legislature and receives approximately $750,000 in university and other funding annually. The Institute offers master's degrees in transportation engineering, transportation planning, and transportation management/administration. The Institute now has approximately 180 students, primarily from public works agencies and engineering consulting firms and a few from public utilities. It coordinates the transportation research activities of a number of academic and other organizations in the New York metropolitan area and also conducts a number of continuing education, technical/management assistance, and public education activities, again focusing on the New York metropolitan area.

Similar multidisciplinary programs with integrated teaching, research and public service roles are being established at other universities, including the University of California, George Washington University, the Massachusetts Institute of Technology and Stanford University. These new programs have already begun to demonstrate that universities can make useful continuing contributions to addressing the plight of public works.

## Merits of CSU's program

All of the analyses conducted during the Cleveland State University feasibility study — the seminars, marketing survey, and national workshop — confirmed the merits of designing and implementing a public works management program. Local practitioners and academics confirmed the need for serving the Cleveland region. State officials and practitioners from other metropolitan areas throughout the state confirmed the same need statewide. For example, representatives from

Dayton city government indicated that they could provide a steady supply of students for a set of courses offered in Dayton and leading to a certificate in public works management.

National officials confirmed the need for public works management programs in other states and internationally. At the national workshop, Nancy Rutledge, from the National Council on Public Works Improvement, stated that the program being designed at Cleveland State University had "providence," that it was a "massive, inspiring" effort. She suggested that the program could be a model that merited support from national, state, and local public agencies and private businesses and a prototype for similar programs at other colleges and universities. (See Figure 1)

All of the analyses also confirmed that there was a demand for all five roles discussed throughout the feasibility study: degree programs; continuing education programs; technical / management assistance; research; and public education. Practitioners strongly believe that only an integrated program provides the flexibility to meet their changing management demands. A program focused on a single role could not provide a short course in one instance and hands-on assistance in the next instance and, therefore, could not help public works agencies to make continuing investments in improving their capabilities. Academics experienced in undertaking interdisciplinary programs — those programs involving more than a single discipline or college — are equally convinced that only an integrated training / research / public service program could survive in a university setting.

Finally, all of the analyses confirmed that successful interdisciplinary programs need to attract predictable faculty participation and funding. To attract faculty participation, programs must offer the teaching and research opportunities necessary to earn tenure and be published in professional refereed journals. To attract funding, a program must offer activities that are marketable both within and outside the university community.

A successful public works management program needs to strive for balance between practitioner and — academic participation in activities and funding.

## Roles and Activities

The proposed public works management program will:

- offer master's degree programs in public works management with undergraduate degrees in civil engineering, urban affairs and other disciplines;
- train public works practitioners through seminars, workshops, conferences and other continuing education programs;
- provide management and technical assistance in public works agencies;
- conduct research on public works issues with technical and management components;
- educate the public on public works issues.

The master's degrees in public works management will be the core of the public works management program. Through these degrees, the program will formally train current and future public works managers in the technical and management skills required to provide and maintain critical public works. As a byproduct of offering these degrees, curricula will be developed that can be used in continuing education programs.

Many of the students in these programs will be part-time as they need to simultaneously be employed as full-time practitioners. As such, they will be bringing to the classroom the issues — opportunities and challenges — that will suggest the agendas for the technical / management assistance, research, and public education activities of the public works management program. The full-time students will be likely candidates to assist in conducting research and continuing education activities so as to generate financial support for their education. Finally, the graduates will be likely candidates for future adjunct faculty appointments as well as full-time faculty and staff of the public works management program.

There are almost endless opportunities for interaction amongst the various activities of the program. Technical / management assistance activities can identify students for the degree and continuing education programs. Research activities can produce data bases and research results that can be released through the public education program. All of the activities can synergistically contribute to the overall goal of the public works management program: that is, to improve the capabilities of the public works practitioners, first in the Cleveland region and, later, throughout Ohio and nationally.

Since hiring of faculty, development of curriculum and initiating the degree programs can take from two to three years, and designing and funding a research agenda even longer, continuing education, technical / management assistance and public education activities will be the initial offerings of the program. Even these activities must await the securing of funding, the hiring of faculty and staff, and the selection of timely activities that meet the needs of public works practitioners.

The activities and guideline suggested in the following sections encompass the first five years of the public works management program, a minimum period in which to market the program and test its long-term utility.

## Degree Programs

The five-year objective of this role is to establish master's degree programs in public works management in both engineering and urban affairs, and to reach a stable annual enrollment of at least 25 master's and ten doctoral students for the combined programs. The two colleges will offer separate degrees with common coursework so as to accommodate the broadest range of undergraduate preparation. In addition to coursework, an internship will be required for students with limited working or management experience or a policy paper for students already in management positions.

Based on the marketing survey, many, if not most, of the students will be full-time practitioners, requiring that coursework is primarily provided outside of normal working hours. In addition to practitioners, undergraduates in engineering and urban affairs will be encouraged to pursue the master's degrees.

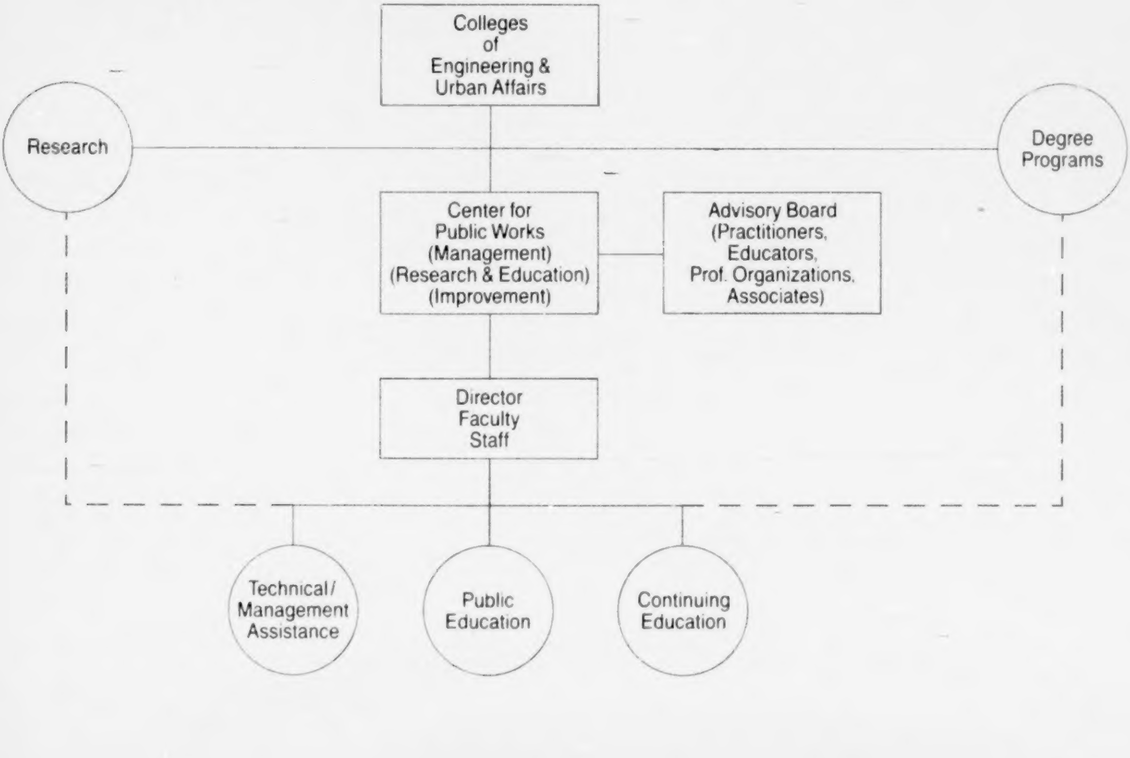
The curriculum for the public works management courses will be developed with the participation of preeminent academics and practitioners from the Cleveland region, Ohio, and the nation. One or two faculty positions will be immediately recruited for the program. In addition, the feasibility of establishing a doctoral program and a National Public Works Academy will be considered once the master's program is launched.

## Continuing Education Program

The five-year objective of this role is to offer quality workshops and coursework on a full range of topics that are timely and responsive to the public works management needs of leading practitioners and which contribute to their career development.

The continuing education program will offer a wider range of course offerings to a wider range of students than the master's degree

**Figure 1: Cleveland State University Public Works Management Program Hypothetical Overall Structure**


Colleges of Engineering & Urban Affairs
Research
Degree Programs
Center for Public Works (Management) (Research & Education) (Improvement)
Advisory Board (Practitioners, Educators, Prof. Organizations, Associates)
Director Faculty Staff
Technical/ Management Assistance
Public Education
Continuing Education

programs. The continuing education program will offer academic credit and other forms of recognition for achieving certain competencies.

The Colleges of Engineering and Urban Affairs, and especially the Urban Center, have extensive experience in providing continuing education programs in every form and location. Leading practitioners and other organizations that have sponsored continuing education activities for them will be involved in the design of the continuing education program. In addition, the feasibility of establishing intensive institutes for new public works officials and mid-career professionals will be explored.

The continuing education activities could be implemented quickly, depending upon the availability of coursework materials, instructors and funding. Up to three topics for seminars or workshops will be selected in the first year to meet the particular needs of leading local practitioners.

## Technical / Management Assistance Program

The five-year objective of this role is to offer technical / management assistance that meets the common needs of leading practitioners and is complementary with the services of private consulting firms to individual clients.

Two related topics will be explored for initial management / technical assistance activities: developing and assisting in implementing geo-based management information systems; and guiding the conduct of infrastructure needs assessments and their use in operations, planning and budgeting systems. In addition, as research activities are undertaken by the public works management program, opportunities will be explored to disseminate their practical results.

## Management Research

The five-year objective of this role is to design an interdisciplinary research agenda and initiate research on evolving topics that meet the needs of leading public works agencies, are consistent with the research interests of participating faculty, and can attract public and other financial support.

The Colleges of Engineering and Urban Affairs are already conducting research on infrastructure-related topics. Complicating the development of a public works research agenda is the present disaggregated state of research activities nationally. Federal and state governments, in collaboration with various research universities and institutions, have made considerable progress in organizing transportation research.

A public works research agenda will be prepared that identifies the public works research needs of the Cleveland region and suggests strategies for targeting resources to address the most promising ones. To help guarantee that the research agenda accurately reflects the priorities of the Cleveland region, a public works research planning committee will be established.

## Public Education Program

The five-year objective of this role is to design and implement a public education program, in conjunction with the Build Up Greater Cleveland programs, that informs interest groups and the general public on public works issues and cultivates a constituency for well-managed public works agencies.

Public education programs are beginning to be undertaken at the state and local levels. The most notable example of a local public works education program has been the Build Up Greater Cleveland program.

In general, the program will assist in bringing timely information and analyses to the general public on current public works issues. Public works public education program activities will be implemented once the program is designed and funding is secured for their implementation, probably in the second year.

## Organization of the PWM Program

A Center for Public Works Improvement will be established by the Colleges of Engineering and Urban Affairs to oversee continuing education, technical / management assistance, and public education activities and to coordinate these activities with the master's degree and research activities of the colleges. An Advisory Board, composed of internal faculty, outside practitioners and associate partners will guide the deans and their representatives in selecting activities to be undertaken by the Center for Public Works Improvement.

A full-time director and two to four full-time faculty will staff the public works management program along with adjunct and visiting faculty and practitioners and doctoral and master's degree graduate assistants.

## Funding of the PWM Program

The public works management program will require the advance commitment of internal and external funding for the first five years. Internal sources of funding include special funding from the Selective Excellence program and regular University funding. External sources of funding include:

- tuition from practitioner-students participating in degree and continuing education programs;
- tuition support from employers of students and other sources;
- fees from public agencies and private firms receiving technical / management assistance;
- annual contributions from associate partners (private businesses and other organizations which provide regular support to the program);
- curriculum development support from the National Science Foundation, the National Research Council and national foundations and associations;
- general technical / management assistance, research, and public education support from state and federal agencies, private businesses, and local foundations; and
- special funding opportunities.

## Summary

The proposed public works management program addresses a critical need but faces overwhelming odds. On one hand, it must create a market for activities that many public works agencies, consulting firms, and others have been reluctant to finance. This is especially true for training in new and evolving technologies and techniques, such as geo-based information systems, which ironically might be the most critical tools for efficient and effective management. Some public works officials still believe that practitioners should bring whatever management and technical skills they need to the job and not require any further on-the-job training.

On the other hand, the public works management program must engender support from these same agencies as well as state and federal agencies, private businesses and foundations, while — and even before — the program develops this market. Securing these simultaneous commitments for a minimum period of five years will require a leap of faith by both consumers and supporters of the program.

The only reassurance is that there already is considerable need for the public works management program and that this need, along with the demand of practitioners, appears to be growing. By initiating this program now, Cleveland State University responds to this need while it is still new and evolving and can emerge as a local, state and national leader in addressing the plight of public works.

## Notes

1. Choate, Pat and Walter, Susan. *America in Ruins: Beyond the Public Works Pork Barrel*, Council of State Planning Agencies. 1981.

2. Schnell, Carlton, Chair, Policy Committee of the Build Up Greater Cleveland program. Speech to the Cleveland State University Public Works Management Program Advisory Committee, Feb. 10, 1987.

3. National Council on Public Works Improvement. *The Nation's Public Works, Defining the Issues.* Washington, D.C.: Government Printing Office. 1986.

4. Hanson, Royce. "The Next Generation of Management of Public Works: Getting Some of It Together," paper presented to the National Council on Public Works Improvement. 1986.

5. Abrams, Joel. "Public Works Engineering and Administration: The Pittsburgh Experience," paper presented at the National Workshop on the Role of the University in Public Works Management. Cleveland, Ohio, April 1987.

6. Malcom, H. Rooney. "Public Works Education at North Carolina State University," paper presented at the National Workshop on the Role of the University in Public Works Management. Cleveland, Ohio, April 1987.

7. American Public Works Association. *Professional Education in Public Works / Environmental Engineering and Education.* Chicago, Illinois, 1974.

8. Op. Cit. Abrams, Joel.

9. City University of New York, Institute for Transportation Systems. "Graduate Study in Transportation;" brochure. New York, New York, 1986.

# State Policy Options For Infrastructure and Growth

By David I. Dresser

*The following is taken from a speech delivered by Dresser at the Infrastructure conference.*

Municipal officials are caught in an infrastructure squeeze — on one hand citizens, federal and state laws, and growth demands are mounting pressure for increased spending. On the other hand federal funds are drying up and citizens are resisting increased local taxes. Water systems, jails, waste treatment, roads and bridges, and transportation systems are all sources of potential problems.

State government cannot expand taxation to compensate totally for federal cuts. However, state policies can help local governments meet these crises more effectively. The current infrastructure legislation pending in the Ohio General Assembly* is desperately needed, particularly in poorer communities; and it represents a significant commitment by the state in support of its local governments. However, the policies that I suggest can increase local government's independence and its range of financial options, without direct cost to Ohio taxpayers.

The first policy that could be established is to encourage the privatization of major public works, such as wastewater treatment facilities, sewage treatment and solid waste disposal systems. Following the trend established in several states, Ohio could implement such a policy through simple legislation that would encourage private sector participation. First, legislation would be needed to provide for the negotiated sale of existing systems rather than sale by public auction. Second, legislation would be required to allow local governments the right to enter into long-term lease obligations, and to commit revenues from user charges to be dedicated for up to 30 years. Many cities in Ohio are under Clean Water Act mandates to make major investments in new wastewater treatment facilities, and have low priority at the Environmental Protection Agency for federal assistance grants. With safeguards that have been developed and tested in other states, these Ohio communities could meet the need for new facilities, eliminate the cost of maintaining and operating existing facilities, and assure citizens of pure water at fair prices.

A second policy would be to broaden the scope of local government's authority to use assessments as a means of financing a whole range of public works to support new development — not on an item-by-item basis, but for the whole cost. Rather than replacing sidewalks along a city block and assessing properties on a frontage foot basis, this type of financing might include the cost of all public infrastructure, including a new library, police or fire station, sewers, sidewalks, streets, and other legitimate needs agreed upon by the public agency and voters of the designated area to benefit from these investments. The assessment can then be allocated to specific lots according to a subdivision plan, accruing to the developer until individual properties are owner-occupied. This assessment district concept has applicability to major new development areas, as well as urban renewal districts that require heavy infrastructure investments before redevelopment.

Let me illustrate just how powerful this approach could be, compared to so-called "impact financing" through which the same improvements were made, and billed up-front through an increase in the prices charged by developers for a home. Assuming that a residential property's share of infrastructure cost were $10,000, a homebuyer financing this cost as part of a 30-year, 8.5 percent mortgage would pay $27,700 in added mortgage cost. If the same improvements were

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assessed for a 15-year period in order to amortize 7.5 percent special assessment bonds, the homeowner would pay $16,700 — a little more than $11,000 in cost savings compared to mortgage financing.

This policy can have major implications on growth because these infrastructure costs do not become part of the municipalities' general debt. Again, this is a public policy with extensive history and legislative background that could be adapted to the Ohio environment.

I am sure that numerous other opportunities exist to create new or revise old state policies that can increase home rule authority while safeguarding adequately the interests in Ohio's taxpayers and assuring responsible public cost management. I would be pleased to share copies of statutes operating in other states for both privatization of public facilities and special assessment districts.

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**Issue 2 was passed by Ohio voters by more than a 2-to-1 margin (1,672,201 for and 690,963 against) on Nov. 5, 1987. Since then lawmakers have been gathering information about Ohio's infrastructure needs and are developing legislation that is expected to be introduced in the early part of this year. Passage of Issue 2 permits issuance of $1.2 billion general obligation bonds over 10 years for local public works.*

# Repairing Greater Cleveland's Infrastructure

*By Walter T. Olson*

It has been four years since the Greater Cleveland community set out to implement its carefully developed capital investment strategy for rehabilitating or replacing countywide roads, bridges, transit, water and sewer systems. How has this effort fared? What is the unfinished business? What lessons have been learned? This article reviews the program from planning to recent progress.

## Background

*The Problem* — The problem is simply the deteriorated condition of the area's aging public capital plant, and its crucial lifelines of transportation, water and sewer systems. Greater Cleveland shares this problem with most older urban centers throughout the nation. A voluminous literature, which will not be reviewed here, exists. The most recent effort to assess the national scene has been the work of the National Council on Public Works Improvements.[1]

The roots of the problem lie in the economics and politics of the 1970s and earlier. From 1965 to 1980, national investment in infrastructure declined 30 percent in constant dollars; in those 15 years it went from 4.1 percent of the Gross National Product to 1.7 percent of the GNP.[2] In Cleveland, investment in infrastructure went from $50 million in 1970 to $25 million in 1980 (in 1972 dollars). As a result, for example, by the mid or late 1970s:[3]

- About one-third of the area's 530 bridges were in intolerable or unsatisfactory condition.
- The quality of roads countywide ranked near the bottom of Ohio's 88 counties, and was dead last in 1976.
- Sixty-three percent of buses and 75 percent of rail cars were approaching their life limit or were about due for replacement.
- Hundreds of miles of water mains were encrusted and partially plugged; 25 percent of water pumped was unaccounted for; and the major pumping and treatment plant was in precarious condition.
- Three major wastewater treatment plants built in the 1920s were being upgraded with federal help; a new collection system including expensive major interceptors was needed to serve them.

*The Planning Process* — The momentum to rehabilitate Greater Cleveland's infrastructure, which began about 1980, was sparked by conversations and meetings among public officials and civic leaders alarmed by the obvious ramifications to the economic well-being, livability, safety and health of the area. Also, the 1980 report by the Urban Institute had quantified the declining condition of Cleveland's infrastructure.[3] Concerned leaders joined forces in a community effort — now referred to as Build Up Greater Cleveland — to address county-wide infrastructure problems. By late 1981, cooperative agreements, organizational arrangements, and a work plan to develop a renewal program — called the Community Capital Investment Strategy — had been established.

A decision-making body, the Policy Committee, was organized with responsibilities to set investment priorities, evaluate financing alternatives and recommend funding strategy. Members included top elected and appointed officials from Cuyahoga County, the city of Cleveland, the Cuyahoga County Mayors and Managers Association, Northeast Ohio Area Coordinating Agency, Northeast Ohio Regional Sewer District, the Regional Transit Authority and private citizens from banking, law, business and industry working through the Greater Cleveland Growth Association. Subsequently, during the implementation phase, this Policy Committee has been expanded to include a U.S. Congressman, a Senator and a Representative from the Ohio General Assembly, the Deputy Director of the Ohio Department of Transportation for Region 12, and additional private citizens.

The clear intent was to develop cooperatively a coordinated, county-

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wide program that would transcend jurisdictional and political lines. Funding was provided by the public sector (Cuyahoga County, the Cuyahoga County Engineer, the city of Cleveland, the Regional Transit Authority and the Northeast Ohio Regional Sewer District); the Cleveland Foundation and the George Gund Foundation. The Greater Cleveland Growth Association provided management and administrative services. The Urban Institute was engaged to provide data bases, analyses, options and recommendations.

An iterative process between the Policy Committee (which reviews findings and sets direction) and the contractor working with the staffs of the Public entities and task forces of the Policy Committee, proceeded during 1982 in four steps to develop a capital investment strategy (see reference 4 for a summary of planning):

- A total inventory of more than $2 billion of renewal needs.[5] (See Table 1).
- A reassessment of hundreds of projects against common criteria to reduce inventory to a more affordable $1.67 billion list; identification of financial shortfall.[6]
- A review of many financing options to identify those that are most fair, feasible and adequate.[7]
- Adoption of the strategy; a set of financing plans and related actions.[8]

## Unfinished Business

*Roads and bridges* — Over the last four years the five-year capital needs and estimated shortfall for county-wide roads and bridges has hardly diminished. Annually, new needs, rising costs of neglected projects, and modest inflation have just about matched investment in repairs.

No significant increases in federal aid to states is expected in the foreseeable future. The Surface Transportation Assistance Act passed by Congress in early 1987 puts an annual $12.35 billion ceiling on highway construction and repair programs for the next five years. In fact, federal apportionments for highways to Ohio in FY1987 were $403 million, down from $538 million in FY1985, and in contrast to $523 million into the Highway Trust Fund from Ohio. Thus localities can only increase their federal assistance by successfully competing with other localities.

Increased state aid is a future possibility. Of the 2.7-cent additional motor vehicle fuel tax enacted by Ohio in July 1987, only about 1.5 percent will come to Cuyahoga County and its municipalities annually by formula, or about $2 million in the next 12 months. To promote equity, the state might be persuaded to assume a larger burden

**Table 1: Community Capital Investment Strategy**

| | Total Capital Requirement 1983-1987 | Funding Shortfall 1983-1987 (in millions) | Strategy |
|---|---|---|---|
| ROADS AND BRIDGES | | | |
| Interstate, state | $210 | | • Maximize equitable state and federal return |
| County, Municipalities | 465 | | • Seek increase in local auto license fee |
| Total | $675 | $216-285 | • Issue General Obligation bonds, county-wide, backed by increased license fee, property tax, or combination |
| TRANSIT | $248 | $45 | • Maximize equitable state and federal return<br>• Issue bonds backed by fare box revenues, sales tax, or combination |
| WATER | $363-463 | $338-438 | • Issue revenue bonds backed by water rate increases<br>• Establish new authority for rate setting and borrowing |
| SEWER | | | |
| Northeast Ohio Regional Sewer District | $251 | $ 28-69 | • Maximize equitable state and federal return |
| County | 29 | 29 | • Issue revenue bonds backed by sewer rate increases |
| Total | 280 | 57-98 | • Borrow from the Ohio Water Development Authority |
| Grand Total | $1,566-1,666 | $565-866 | |

of highway investment within municipal boundaries than it now does. In fact, the present administration has suggested that the Ohio Department of Transportation be made responsible for maintenance and repair of bridges on state highways within municipalities, a responsibility it does not now have. Also, if Ohio voters approve a constitutional amendment to permit issuance of $1.2 billion general obligation bonds over 10 years for local public works, infrastructure in Greater Cleveland would be helped.* Legislative leadership has said that allocation formulas in the subsequent enabling legislation would be structured on factors such as fraction of population and fraction of contribution to the general fund in order to assure fairness and equity.

## Progress

*Program Implementation* — With adoption of the Community Capital Investment Strategy in January 1983, the Policy Committee agreed to continue to work together to implement the results of its planning. The exceptionally strong intergovernmental cooperation that characterized the successful planning work has continued, and, as will be seen, underlies substantial progress. In summary:

- *An infrastructure data base is being maintained* — The Urban Institute continues to acquire from local governments up-to-date, coordinated lists of projects for infrastructure investment involving local funding. Annual adjustments are made for contracts let, capital program changes, revised cost estimates and revised income estimates.
- *Constituencies have been kept informed* — Informational and educational activities were instituted in order to gain a base of support for the program. Public affairs firms were engaged to assist in preparation of printed materials and an audio-visual presentation. Informational activities include testimony, presentations, speakers bureau, pamphlets, a monthly newsletter, articles, editorials, newspaper, TV and radio and replies to queries. Key constituencies include pertinent state and federal legislators and officials, civic leaders, the financial community, labor, editors and service organizations.

  Also, the program participates, on occasion, with state and national groups working on the infrastructure problem.

  An additional result of these activities is that attention has been focused on Greater Cleveland as a community dealing successfully with a problem that is endemic in the nation. The "Cleveland recipe" has been widely sought. Other cities emulating Cleveland include Columbus and Cincinnati.
- *New funds have been acquired* — The public officials and private citizens involved in the program have been very effective in pursuing new funds from federal, state and local sources.

  For federal help, Greater Cleveland benefits from a very supportive Congressional delegation. Their helpfulness must fall within the art of the possible, however. Thus, the program coordinates efforts closely with the Northeast Ohio Area Coordinating Agency, the official Metropolitan Planning Organization for the five-county area. In fact, the program shares a Washington consultant on infrastructure affairs with the Northeast Ohio Areawide Coordinating Agency (NOACA). NOACA is very effective in matching local needs to financing opportunities from federal and state sources. When the Congressional delegation works with both NOACA and the private sector, a most productive relationship ensues. The underlying key is that the community speaks one message regarding its needs.

  Most of what is spearheaded by the local delegation in Washington benefits all of Ohio; that is, the 85 percent minimum allocation for highway funds, the retention of construction grant formulas in the recent Clean Water Act, etc. For state help, good working relationships with legislative and executive leaders have helped the community. Locally, bond sales for roads and bridges in Cleveland and for the water system have accelerated infrastructure repairs.

  To date, these efforts have facilitated the acquisition of more than $570 million in new money for infrastructure, and were absolutely essential for securing $157 million of that amount (see Table 2). The existence of a community-wide program has helped improve the bond rating for the city and county.

*Renewal progress* — Annual contracting where local funds are included climbed two-thirds of the rate required to achieve capital plans. (see Table 3)

Interstate and large state road and bridge contracting reflected adequate funding. Contracting for

---

**Issue 2 was passed by Ohio voters by more than a 2-to-1 margin (1,672,201 for and 690,963 against) on Nov. 5, 1987. Since then lawmakers have been gathering information about Ohio's infrastructure needs and are developing legislation that is expected to be introduced in the early part of this year.*

**Table 2: New Funding for Cleveland Area Infrastructure Improvements, 1983-Sept. 1987.**

**Non-budgeted Funds (extra allocations) Secured by the Cooperative Efforts of Public and Private Leaders.**
**(in millions)**

| | |
|---|---|
| $ 8.0 | Northfield Road Bridge (opened September 1985) |
| 3.6 | Main Avenue Bridge (initial work 1983) |
| 15.5 | Southwest Sewer Interceptor (start 1984) |
| 7.1 | Heights/Hilltop Sewer Interceptor (start 1984) |
| 34.3 | Complete I-480 (discretionary 1984) |
| 7.9 | Clark-Quigley Connector (1985) |
| 52.2 | Roads and Bridges (discretionary IX, 1983, 1986, 1987) |
| 24.1 | Transit (discretionary IX, 1985, 1986) |
| 4.4 | Roads and Bridges (reclaimed IX balance, 1987) |
| $157.1 | Total |

**Tax and Bond Revenues Secured for Infrastructure**
**(in millions)**

| | |
|---|---|
| $ 80.0 | Surface Transportation Act Revision, FY83-FY86 |
| 257.6 | Waterworks Revenue Bonds, 1983, 1985, 1986, 1987 |
| 25.2 | RTA & Tower City: UDAG, UMTA, 1985 |
| 46.9 | Roads and Bridges, City Bonds, 1983, 1985, 1986, 1987 |
| 3.2 | Transit from State, Annually |
| $412.9 | |

**Table 3: Total Value of Contracts Let (in millions)**

| | 1983[9] | 1984[10] | 1985[11] | 1986[12] |
|---|---|---|---|---|
| Roads and Bridges | | | | |
| Interstate, State | $ 35 | $ 66 | $ 6 | $ 57 |
| County & Municipalities | 52 | 30 | 36 | 63 |
| Total | 87 | 96 | 42 | 120 |
| Transit | 38 | 10 | 14 | 6[a] |
| Water | 6 | 13 | 46 | 65 |
| Sewer (NEORSD & County) | 59 | 5 | 31 | 25 |
| Grand Total | $190 | $124 | $133 | $216 |

a. $39 million for Tower City not contracted by end of 1986.

**Table 4: Total Capital Requirements and Shortfall[12] (in millions)**

| | 1986-1990 Total Capital Requirements | 1986-1990 Shortfall | 1987-1991 Total Capital Requirements | 1987-1991 Shortfall |
|---|---|---|---|---|
| Roads & Bridges | | | | |
| Interstate, state | $ 91 | | $ 18 | |
| County, Muni's | 555 | | 510 | |
| Subtotal | 646 | $186-261 | 528 | $ 97-183 |
| Transit | 266 | 48-96 | 319 | 16 |
| Water | 371 | 321 | 294 | 101 |
| Sewer | 348 | 195 | 332 | 164 |
| Grand Total | $1,631 | $750-873 | $1,473 | $378-464 |

county and municipality roads and bridges was twice that of recent years, but still is only about half of what it should be to catch up with capital needs. RTA is expected to soon be contracting funds available to it at a greater rate. Waterworks contracting has reached an annual level commensurate with capital plans; more than $176 million is available. The water system is no longer in distress; it is meeting all requirements of pressure and service. Most of the contracting for sewers is by NEORSD. NEORSD is at or near the level of contracting planned in view of reduced intergovernmental aid. Some huge expenses lie over the five-year horizon.

Year-to-year additions, deletions, and revisions to cost estimates, as well as annual contracting, impact the total capital requirements. Table 4 shows the results. Proceeds from revenue bonds for the waterworks, funds for roads and bridges from city of Cleveland bonds, and an expected $12 million annual yield from the newly authorized and enacted local motor vehicle license fees produce major reductions in funding shortfalls. Most significantly, the total funding shortfall projected for area infrastructure for five years has almost been halved.

The Build Up Greater Cleveland program has consistently proposed an infusion of capital by bonds of the County supported by property taxes, or an increased local automobile license fee, or a combination of these; and an increase in the local automobile license fee sufficient to assist borrowing and to maintain roads and bridges at a higher level so they will not fall again into disrepair. A sales tax increase of 0.5 cents by Cuyahoga County is a possible revenue source, but County administrative needs and shortfalls in human services funding appear to claim all of these proceeds.

Following a state-wide legislative study and urged by numerous civic groups, the Ohio General Assembly passed legislation authorizing counties to enact an additional $10 and municipalities an additional $5 as a local motor vehicle license fee; $5 has been permitted since 1967 and would have been $18 today, if adjusted for inflation.

In September, the Cuyahoga County Commissioners, responding to broadly based community wishes expressed in hearings, letters, calls, and stories and editorials in the news media, enacted the $10 fee. Cleveland and about 10 other cities in the county have now also enacted the $5. The more than $12 million annual proceeds and such state and federal funds that they can leverage won't solve all the area's road and bridge problems, but they do make a marked reduction in the persistant funding shortfall projected over five years for local road and bridge repair. As noted above, unfinished business will be to leverage an equitable share of federal and state funds when these fees start to be collected in 1988.

*Sewers* — By the end of the 1980s, federal aid will have been converted from the present $2.4 billion annual construction grant program into a revolving loan fund. The Northeast Ohio Regional Sewer District expects only about $75 million more federal aid. Local capital investment needs, driven by environmental requirements, include completion of interceptor systems, intercommunity sewers, and community relief sewers totaling in the range of $425 million in a program that will run until the year 2000, according to the District. Also, unknown but large investment requirements lie ahead for addressing combined sewer overflows and stormwater runoff.

## Conclusions

Clearly, for both short and long term infrastructure needs, it will be important to keep civic leaders and the general public informed of the necessities and benefits of public works that work.

For now, the time is opportune to continue to catch up. The community has a plan. The plan makes sense; only necessary projects are included. The plan is affordable. Intergovernmental aid is being maximized. Deterioration of the infrastructure has been reversed; local infrastructure is on the mend. Delay has been costly; further delay will only continue to run up costs.

## References

1. The National Council on Public Works Improvement: "The Nation's Public Works: Defining the Issues," 1111 18th Street, Washington, D.C., September 15, 1986.

2. Government Finance Research Center of the Municipal Finance Officers Association: "Building Prosperity — Financing Public Infrastructure for Economic Development." Washington, D.C. October 1983. p. 7.

3. Humphrey, Nancy, Peterson, George E., Wilson, Peter: "The Future of Cleveland's Capital Plant." URI 26900. The Urban Institute, Washington, D.C. 1979.

4. Olson, Walter T.: "To Build Up Greater Cleveland — The Community Capital Investment Strategy." Urban Resources, vol. 1, no. 2, pp. 17-23, University of Cincinnati, Fall 1983. Also in: Kemp, Roger L. (editor): "America's Infrastructure-Problems and Prospects," Interstate Publishers, Danville, IL, 1986, pp. 157-170.

5. Peterson, Godwin, Humphrey, Miller: "The Cleveland Area's Capital Plans and Financing Requirements," The Urban Institute, Washington, D.C., contractor's report 3059-1, revised April 23, 1982.

6. Peterson, Humphrey, Godwin, Miller: "Reassessing Cleveland's Capital Requirements," The Urban Institute, Washington, D.C., contractor's report 3059-2, revised July 14, 1982.

7. Humphrey, Miller, Godwin: "Financing Greater Cleveland's Capital Requirements," The Urban Institute, Washington, D.C., contractor's report 3059-3, revised October 29, 1982.

8. Peterson, Humphrey, Miller, Godwin: "Financing Infrastructure Renewal for Greater Cleveland-The Greater Cleveland Community Capital Investment Strategy," The Urban Institute, Washington, D.C., contractor's report 3059, revised February 1983.

9. Humphrey, Nan: "The Greater Cleveland Community Capital Investment Strategy — One Year Later," The Urban Institute, Washington, D.C., contractor's report, February 16, 1984, revised June 8, 1984.

10. Humphrey, Nan: "The Greater Cleveland Community Capital Investment Strategy — Two Years Later," The Urban Institute, Washington, D.C., contractor's report, February 22, 1985, revised August 8, 1985.

11. Humphrey, Nan: "The Greater Cleveland Community Capital Investment Strategy — Three Years Later," The Urban Institute, Washington, D.C., contractor's report, March 14, 1986, revised October 3, 1986.

12. Wines, Kingsley, Friedman: "The Greater Cleveland Community Capital Investment Strategy — Four Years Later," contractor's report, March 15, 1987, revised September 21, 1987.

# Public / Private Partnership:

## Cincinnati's Attempt to Fight Infrastructure Deterioration

*By Paula Knecht*

The city of Cincinnati is waging war against the deterioration of its streets, sidewalks, sewer and water lines and other public works.

There is nothing unique about Cincinnati's infrastructure problems. Cincinnati municipal government has, however, formed a unique partnership with the private sector to study the problem of its deteriorating physical assets, and to identify steps to be taken to restore them to good condition.

Five committees have been established to investigate different parts of the infrastructure (see Table 1).

Each committee has recruited a core group of volunteer committee members, specialists and technical advisors. City officials and their staffs are working with the committee members to develop an informed understanding of the city's needs and to explore the most cost effective ways of meeting those needs.

Each committee is developing an independent point of view regarding the physical assets and will be recommending action to be taken to get the assets into good condition and appearance.

The Commission's findings were presented to Cincinnati City Council on Dec. 3, 1987.

**Table 1: Committees, Chairs and Study Areas of the Cincinnati Infrastructure Commission**

| Committee | Chair or Co-chair | Study Areas |
|---|---|---|
| Streets, bridges and roads | Chairman and Chief Executive Officer of Cincinnati Bell, Inc. and the President of the University of Cincinnati. | Streets, highways, bridges, viaducts, traffic signals and lights, sidewalks, steps and retaining walls. |
| Buildings, skywalks, waste collection and disposal | Chairman and Chief Executive Officer of Federated Department Stores, Inc., and the Senior Vice President of General Electric. | Cincinnati City Hall, police and fire stations, other municipal buildings, solid waste collection and disposal, Fountain Square and skywalks. |
| Parks, parkways and recreation facilities | Chairman and Chief Executive Officer of Taft Broadcasting, and the Chief Executive Officer of Fifth Third Bank. | City parks and recreation facilities including buildings, shelters, pools and other physical improvements, and parkways. |
| Water and Sewers | Chairman of Cincinnati Gas & Electric Co. | Fresh water treatment and distribution; storm water collection, distribution and treatment; sanitary sewer collection, treatment and disposal. |
| Funding | Managing Partner of Arthur Andersen & Co. and the Chairman and Chief Executive Officer of the Kroger Co. | Funding alternatives such as local taxes, fees and bonds; federal, state and county sources; sale of assets; neighborhood and citizen voluntary support; and efficiencies from operations. |

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*Paula Knecht is supervising management analyst for the Budget Office of the city of Cincinnati.*

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Volume 3 Number 3 1988

# OHIO ECONOMIC TRENDS REVIEW

In this issue:

The Smaller Ohio Economies

Middle-market Manufacturing
HQs in Cleveland

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# OHIO
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# The Smaller Ohio Economies:

## An Industrial and Occupational Analysis

*Wilbur R. Thompson and Philip R. Thompson*

### Abstract

The conventional industrial approach to local economic development analysis is integrated with a new "occupational-functional" approach to complete the first study of an entire state as a "federation of local economies."

Ohio's medium and small metropolitan areas and nonmetro areas follow the general state pattern of leading in engineering and lagging in science. Below average proportions of college graduates reflect the specialization in engineering-based durables rather than in the science-based nondurables. The notable weakness of the smaller cities and nonmetropolitan counties in white collar precision work suggests an especially hard reindustrialization.

Average levels of high school education suggest upgrading from unskilled to semi-skilled work will be no harder here than elsewhere. But progressing to precision work will be hampered by the relative lack of college degrees, creating congestion in semi-skilled work, slowing movement out of unskilled work.

Without a *pro rata* share of headquarters operations in local exports, community leadership in local economic development efforts must come more from executives, managers, and proprietors of local service business, a class less knowledgeable about the global economy. With precision work following routine work abroad, the R&D path blocked by no university, and the headquarters role hampered by poor air and business services, the entrepreneurship path remains as the best hope for small places. We place a high priority on new measures of entrepreneurship for small places. We argue again for a study-in-depth on the role of the public library in supporting small entrepreneurs, especially in places without even a community college.

All four medium-size Ohio metropolitan areas show the highest industrial specialization. Primary and fabricated metals do not need this size place, rather their growth "over-builds" these cities. And the machinery industry in Ohio is split between the largest and smallest places, suggesting further study of city sizes. Unaccountably, Ohio's small metropolitan areas appear to be more industrially specialized than larger and smaller places.

By calculating an "expected" (industry-mix-adjusted) number of engineers, Ashtabula had the "right" industries to do more engineering and precision work than average, and more than they actually did, suggesting unexploited opportunities in technical training. Given the steady growth of CAD-CAM, extending the analyses to computer scientists and technicians merits a high priority.

Two nonmetropolitan counties (Guernsey and Muskingum) are at an intersection of two interstate highways, suggesting unexploited potential in wholesaling, trucking, and warehousing. A new analytical technique used here could identify other new service export industries.

To coordinate industrial and occupational targeting, we focused on Northwest Ohio and found Henry county's heavy specialization in "canning and preserving fruits and vegetables" endows it with a high proportion of science technologists. Since neighboring counties also specialize in the food industry, Ohio might look to Bowling Green State University as a center for research and continuing education in food sciences, and nearby schools for support in advertising and marketing today's fads and fashions in food.

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*Wilbur R. Thompson is Professor Emeritus in Economics at Wayne State University, and former holder of the Albert A. Levin Chair of Urban Studies and Public Service at the College of Urban Affairs, Cleveland State University; he is a principal in Thompson Associates, Albuquerque, N.M. Philip R. Thompson is a former Research Associate at the College of Urban Affairs, Cleveland State University and currently a principal in Thompson Associates.*

## Introduction

This article has three broad purposes, reflected in its three main sections. First, our new "occupational-functional" approach to local economic development analysis, previously applied to the seven largest metropolitan areas in Ohio, is here extended to the remainder of the state[1]. Profiles have been developed for four medium-size metropolitan areas of one-quarter to one-half million population, seven small metropolitan areas of less than one-quarter million population, and 48 non-metropolitan counties, using the same techniques applied in our analysis of the seven largest metropolitan areas.

Second, the earlier framework has been broadened to include the conventional industrial approach, to complement the new occupational-functional approach. In addition, a traditional index, the "location quotient," is supplemented by a 30-year-old but little used variation on that measure, called the "index of surplus workers," and is applied to all the areas, across the state. We have now a second, complementary view of the economic base of Ohio's federation of local economies. Further, in a new use of this old index, statewide spatial patterns of "central-place-type activities" — centers with surrounding and adjoining markets — are cast in bolder relief.

Third, we have extended our earlier work in depth by probing more deeply into the distribution of engineers, natural scientists, engineering technicians, and science technologists across Ohio in a way that brings together the industrial and occupational approaches, and synthesizes the two. The actual proportion employed in a given occupation, say, engineering, in a given area, is divided into two parts. One is the number of engineers that one would *expect to* find based on whether the place has a mix of industries that are rich or poor in engineers. The other is the number which measures the extent to which that place over- or under-performs in engineering — *functions* as an engineering center, adjusted for its industry-mix.

## I. Extending the Occupational-Functional Approach to Ohio's Smaller Metropolitan Areas and Nonmetropolitan Counties

Access to natural resources and linkage between industries have, historically, been leading determinants of local economic development throughout Ohio. For example, the steel *industry* attracted by nearby coal and water-borne iron ore induced, in turn, the Timken company to move from its original location in St. Louis to Canton so that it could control the quality of the steel used in its patented ball bearings. Similar logic drew the Diebold Vault company to Canton (a company whose growth skyrocketed when the contents of many of its safes were found intact within buildings which had been gutted in the great Chicago fire).

Today, rather than natural resources, the human resources of an area, as reflected in its local *occupation-mix*, are more often the key locational and growth variables. For example, one employee in four within the *industry* of "guided missiles, space vehicles, and parts" is an engineer. Few places have a pool of engineers large enough to support this high-tech industry. Nearby universities that produce these engineers become a key factor.

But the local development analyst does well to avoid being distracted and confused by data on hundreds of occupations, almost too readily available in various Censuses. In our earlier article, it was argued instead that it is both convenient and incisive to identify five broad *occupational-functional* classes that define five local economic roles or development paths:

1. Entrepreneurship, emphasizing innovation and risk taking;
2. Central administration, serving as a headquarters city;
3. Research and development, a center of science and technology;
4. Precision operations, a place of skilled work;
5. Routine operations, a pool of low-skilled labor.

Finer subdividing has come as we have gained new insights from hands-on experience. For example, precision work is already being subdivided in our data base into blue collar skills (tool-and-die-makers), white collar occupations (auditing and advertising), and new "white coat" laboratory technologies. But even these subdivisions are not so clean-cut; consider new academic programs offering a joint degree in engineering and business, as preparation for *research management* or for entrepreneurship in high-tech industries.

In this section we will examine the occupational-functional profiles of the eleven Ohio metropolitan areas of less than one-half million population in 1980 and Ohio's 48 nonmetropolitan counties. Taken together with the first article, this section will complete the occupational-functional topographic "map" of Ohio (to which we add an industrial map in the next section). We will emphasize nonmetropolitan areas because they face development problems at least as burdensome as large places, must make do with smaller, less specialized staffs, and must work around a lack of data.

## The Indexes

The reasoning behind the indexes used in these occupational profiles is apparent for some, whereas for others some explanation is required. The reader is referred to an earlier article published in this journal and to a chapter in *The Future of Winter Cities* for a fuller description of the indexes and the rationale for their choice.[2]

Public library expenditures per capita have been added as an index of entrepreneurship because a pattern of high correlations was found that suggests a causal connection.[3] Foundation expenditures per capita is correlated 0.78 with public library expenditures for the 18 metropolitan areas within Ohio ($p < 0.001$). And public library expenditures per capita is correlated 0.56 with employees per capita in the 1985 *Inc.* 500 (smaller, privately-owned, fast-growing companies) for those same 18 metropolitan areas ($p < 0.01$). The hypothesized causal relationship is detailed elsewhere.[4]

Two forms of the comparative indexes for the Ohio metropolitan areas are given in Table 1, but only one is shown for the nonmetropolitan counties. Location quotients have been derived for both, but the Ohio metropolitan areas have also been ranked in their size-class: either within the 71 U.S. metropolitan areas of between 250,000 and 500,000 population or the 168 U.S. metropolitan areas below 250,000. The ranks for the metropolitan areas are presented in parentheses.

## Medium-sized Metropolitan Areas

Ohio's four medium-size metropolitan areas (population 250,000 to 500,000) display a combination of below average positions in natural scientists, percent college graduates among the population 25 years and older, and the percent of technologists and technicians within the employed. This probably reflects the absence of research-doctorate programs, except in Hamilton-Middletown, where the doctorates, granted by Miami University, are all within the life sciences.

In sharp contrast (with one exception) each area makes an above average showing in headquarters for *Fortune* 500 industrial companies, in percent of central administrative office (CAO) employees, and in percent working in "commercial research, management, and data processing." Lorain-Elyria is an exception probably because the corporate headquarters that might have located here, located instead in nearby Cleveland. (Why this has not also happened in Hamilton-Middletown, close to Cincinnati, is not clear.)

The dominant export industry of the four areas is primary metals (see Section II). This heavy-industry base is reflected in three above average location quotients:* (1) percent precision production workers within the employed, (2) percent "fabricators and assemblers," and (3) percent "handlers and helpers." Higher than average per capita employments in high, middle, *and* low skill blue collar work may only indicate that these four metropolitan areas are specialized in manufacturing. More informative, and more telling, is the below average location quotients for the ratio of precision production to routine workers. A next step will be to construct more such ratios to profile better the skill-mix within a manufacturing specialization.

The public library expenditures per capita of Canton and Lorain-Elyria are both above average, perhaps due to their high foundation assets per capita. Canton ranked first among the 18 Ohio metropolitan areas in 1980, Cleveland ranked second, and Akron ranked fourth. (Cleveland-Akron-Lorain is a consolidated metropolitan area.) Ironically, the one *Inc. 500* company found in this size-class was located within Huntington-Ashland, which had the lowest public library expenditures per capita in the Ohio group in 1983. This (primarily Kentucky) metropolitan area is the one glaring exception to the overall positive correlation between public library expenditures and entrepreneurship, as measured by the *Inc. 500* index of fast-growing companies.

Three of the four areas (Canton excepted) have lower than average proportions employed in advertising, which is probably traceable to their undifferentiated product — primary metals. This is supported by their lower than average proportion of designers. Canton's location quotient of 114 and its high rank of 5 in percent employed in advertising may reflect the fact that household appliances are its fourth largest export industry and North Canton is the headquarters for Hoover vacuum cleaners — a highly differentiated product that calls for heavy advertising.

All four areas have a higher than average proportion of homeowners, likely due to the high wages paid for even unskilled plant manufacturing. High home-ownership is good for metropolitan areas when it leads to immobility of *high skill* workers, who by staying on may attract replacement businesses. It is a burden when it leads to the immobility of *low skill* workers, who by staying on impose local fiscal strains, without exerting the same attractive force.

With the exception of Huntington-Ashland, the proportion of the population 25 years and older who are high school graduates is above average. This is in sharp contrast with the below average proportions of college graduates. The concentration in engineering-based industries in these four areas (compared to science-based industries) may account for this phenomenon; engineering technicians are much less likely than science technologists to be college graduates.

Lower than average levels of female labor force participation also reflect the heavy reliance on metalmaking. The science-based industries are more likely to use women because of higher educational requirements. A majority of college graduates are now women and science is one field where beginning salaries for women are, on average, higher than those for men. Heavy reliance on metal-making also explains in large part the lower than average proportion of employed females who are managers.

## Profiles of Small Metropolitan Areas

*Headquarters.*

Looking first to the location quotients, the most striking difference between the four places with between one-quarter and one-half million population (referred to above as "medium-size metropolitan areas") and the seven "small metropolitan areas," with less than one-quarter million population, is that the headquarters function virtually disappears. Only Newark shows broad strength in the manufacturing headquarters. Even Newark has ceased to be an exception because it has recently been redefined by the Census as part of the Columbus metropolitan area.

Probing deeper might determine whether the growth of the Newark economy caused it to attract and send-out more commuters to nearby Columbus or whether headquarters operations simply chose Newark to be close to Columbus for business and technical support. The above average showing that Parkersburg-Marietta makes in the *Fortune* 2nd 500 is due to a single company (McDonough), which makes leather products on the West Virginia side of the metropolitan area.

Still, whatever the causal link, the headquarters function, so notable across much of Ohio, seems to encounter its *fall line* at about 250,000 population. This population threshhold may be national in scope because these areas fare better when ranked nationwide in their own size-class. Four of the seven ranked above average in percent of manufacturing employees working in central administrative offices.

These small metropolitan areas are also underrepresented nationwide in the *Fortune* 500 indexes. If representation were proportional to population, the 239 small metropolitan areas would have 55 headquarters for each of the *Fortune 500* indexes. While some places could have two or more corporate headquarters, the fact that all three *Fortune 500* indexes show headquarters in less than half of the expected 55 metropolitan areas indicates that metropolitan areas of this size-class host less than their population share of these headquarters. Therefore, we should not be surprised that small places in Ohio report relatively few headquarters.

*Entrepreneurship.*

The dampening effect on entrepreneurship of the large firms and plants of the steel industry carries over from the medium-size to the small metropolitan areas. While the place of small business is below average generally among the seven small metropolitan areas, it is especially weak in the steel-dominated Steubenville-Weirton and Wheeling areas.

Public library expenditures, used here as indexes of technical support to businessmen, entrepreneurs, and (in the absence of research-doctorate universities) to scientists and engineers, are also low in general and lowest in Steubenville-Weirton, which attains only about two-fifths of the national average level. Mansfield may have above average public library expenditures because its foundation assets are the highest of this group (as argued above). While its location quotient of 88 indicates a below-population-share, this is a strong showing for a small metropolitan area because foundations, like corporations, tend to locate their headquarters in large places. In fact, Mansfield's foundation assets per capita in 1980 were the fifth highest among the 18 Ohio metropolitan areas.

*Research & Development*

The pattern in engineering is much the same as in central management, a sharp drop from well above average in three of the four medium-size metropolitan areas to well below average in six of the seven small ones (with Newark again the exception and proximity to Columbus the apparent explanation). These metropolitan areas fare better when ranked within their size-class, five of the seven having a rank above the nationwide median location quotient of 84.

In natural science, the smaller metropolitan areas about match the performance of the medium-size ones, but at a level only about two-thirds of the national average. These two sets of smaller metropolitan areas reinforce the general pattern across Ohio of leading in engineering and lagging in science. The below average performance in percent of college graduates reinforces this conclusion, and one not changed when looking at the ranks instead of the location quotients. We believe careful study will show that this follows from specialization in engineering-based durables rather than in the science-based nondurables.

*Precision*

In blue collar "precision production" operations, as measured by the ratio of precision to routine (semi-skilled and unskilled) work, the smaller metropolitan areas are much like the medium-size ones, standing at about 90 percent of national average. However, considering the above average performance of these seven areas in the percent of the employed working in precision production, a below average ratio can only be due to an even larger number of workers performing semi-skilled and unskilled work. The over-proportionate representation of these metropolitan areas in "fabricators and assemblers" and in "handlers and helpers" (see the "Routine" section) supports this interpretation.

In white collar precision operations, measured by "technologists and technicians, except health," the medium-size places exhibited a general level of 90 percent of the national average, while the smaller metropolitan areas are even lower at only about two-thirds of the average, and exhibiting a much greater variation (with, again, Newark an extreme exception). The ranks show the same standing. The greater weakness of the smaller metropolitan areas in white collar precision work suggests that they will have an even harder time reindustrializing.

*Routine*

In routine operations, the occupation-mix of both the medium-size and small metropolitan areas show heavy specialization — a high percent of total employment — in both kinds of semi-skilled work (machine operators and assemblers) and the one unskilled work indexed (handlers and helpers). Perhaps we have shown little more here than the simple fact that all of these local economies reflect the general *industrial specialization* in manufacturing that characterizes most of Ohio. We need to adjust this occupational data for the industrial structure, much as we have used the ratio of precision-to-routine work to sharpen measurement on the precision production path.

The national average level of high school education suggests that upgrading the labor force from unskilled to semi-skilled work will be no harder here than elsewhere in the country. But a progression from semi-skilled to skilled work will be hampered by the widespread absence of the increasingly necessary college degree. Moreover, the below-average level of college-educated workers threatens congestion on the semi-skilled rung of the occupational ladder that will slow movement out of — mobility up from — unskilled work.

## Profiles of Nonmetropolitan Areas

*Entrepreneurship*

About nine-tenths of the 48 nonmetropolitan counties show weakness in entrepreneurship in our thinning indexes. While never numerous or exacting, the indexes that we have heretofore used to measure entrepreneurship in metropolitan areas fail almost completely in nonmetropolitan areas; many are drawn from sources such as national magazines, e.g. *INC*, that almost certainly miss most of the innovativeness and risk-taking displayed in small, out-of-the-way places.

Nevertheless, for the eleven counties of Ohio in which there are some foundations, the correlation between foundation expenditures per capita and public library expenditures per capita is 0.55 ($p < 0.025$). This is higher than the correlation between foundation expenditures per capita and public library acquisition expenditures per capita for the 48 contiguous states ($r = 0.31$, $p < 0.01$) This result reinforces our feeling that localities, not states, are the basic units of community identification and economic analysis. (Note the slogan "Cincinnati USA" rather than "Cincinnati, Ohio" in a recent advertising campaign.)

*The headquarters function, so notable across much of Ohio, seems to encounter its fall line at about 250,000 population.*

*Headquarters*

Unfortunately, we lose the *Census of Manufacturing* data on employment in "central administrative offices and auxiliaries" (CAO) for geographic divisions below the metropolitan area level. But the *Census of Population* data on resident "executives, administrators, and managers" can be traced through nonmetropolitan counties. And we find that employment in this occupational group, as an index of the corporate policy-making and management functions, tends to range from only about one-half to three-quarters of the national average, with a medium value for the 48 nonmetropolitan counties of only two-thirds of the national average.

Only Hancock County shows above average performance in resident "executives, administrators, and managers," a result which is likely due to the presence within its largest city, Findley, of one *Fortune* 500 company (Cooper Tire and Rubber) and one former *Fortune* 500 company acquired by another without the headquarters of the subsidiary being relocated (Marathon Oil). These corporate headquarters may explain Hancock's above average per capita foundation and public library expenditures.

Without its share of headquarters operations in the export sector, community leadership in local economic development efforts will have to come more from executives, managers, and proprietors of local service business. This has always been so because this class has their personal fortunes tied most closely to the local economy. But they are also less knowledgeable about the national and global economies into which all places are increasingly tied. How can Ohio serve better, to quote the old movie newsreels, as the "eyes and ears of the world" for small places?

*Research & Development*

The research and development role of nonmetropolitan counties is even weaker than that of central management, with a median proportion employed as engineers reaching only 61.5 percent of the national average, and median employment as scientists attaining only 33.5 percent of that average. Again, we see the general tendency of the state to lead in engineering and to lag in science.

*Precision Production*

Precision production workers are, in general, more than proportionately represented in the nonmetropolitan counties, with a median location quotient of 1.23. But technologists and technicians show much less than the national average level of employment in all but two nonmetropolitan counties (Union and Guernsey), with a median location quotient of 0.60. These two inverse occupational patterns are consistent with the very low level of college graduates in nonmetropolitan Ohio: a median location quotient of only 0.56.

In general, precision production workers, that is, blue collar skilled workers, have gained their skills in vocational education programs or through on-the-job apprenticeship — only a little over 7 percent are college graduates. In sharp contrast, about 18 percent of the science and engineering technologists and technicians have graduated from college.

*Routine Production*

Only one of the 48 nonmetropolitan counties shows a higher than average proportion of high school graduates (Hancock) and two are at the national average (Ashland and Union). By contrast, for the lowest level of education (less than five years of school), only three counties show a significantly above average location quotient: Scioto, Pike, and Gallia, which are Appalachian Ohio counties. In sum, nonmetropolitan Ohio is short of high school graduates but at least it is also short of those with the least education.

All but four of these counties are well above average in their proportions of semi-skilled and unskilled *manufacturing* workers, reflecting at least two factors. First, they are more than proportionately engaged in manufacturing. Second, their low density populations leads to low living costs, making them inexpensive places for routine work.

All 48 nonmetropolitan Ohio counties reveal above average proportions of owner-occupied housing. Unfortunately, this reduces the mobility of unskilled, easily replaced workers. Higher than average wages for skilled, semi-skilled, and unskilled work may explain the high rates of owner-occupied housing. But the wage surveys for counties are so meager that new sources will have to be found to support this explanation (or even to compare Ohio county labor costs with those of the larger Ohio areas).

*General Remarks*

The wide variation we have found at the county level in almost all of the indexes will diminish when we have been able to identify the clusters of counties that form true nonmetropolitan economies, the counterparts to the various multicounty metropolitan areas. (Feasible commuting ranges — distances and travel-times — are surely about the same through the countryside as along expressways in metropolitan areas.) Grouping counties tends of course to average out differences between local economies. Analyses in depth would seem therefore more appropriate after we have performed some spatial analyses (as we do in Section III).

## Entrepreneurship in Nonmetropolitan Areas in the Global Economy

The measurement and analysis of entrepreneurship in smaller areas is as important as it is in larger places, especially as the global economy becomes more pervasive. Routine operations, the last retreat of small places, is fading as industries filter-down — all the way down and out of the country to foreign sites whose low labor costs are unapproachable in even rural U.S. local labor markets. With precision work tending to follow routine work to foreign countries as their economies mature, the R&D path blocked by the absence of a major university, and the headquarters role ruled out by the lack of a major airport and supporting business services (big city infrastructure), the entrepreneurship path looms ever larger as the best hope.

If invention and innovation — creativity — can still flourish in small, out-of-the-way places, nonmetropolitan areas could live by their wits. Even then, they would probably continue to run, in order to stand still, as each successful new business struggles with the temptation to move to larger places as it grows larger and looks more to worldwide markets. Growing businesses will tend to either move out or lose out to large corporations, especially in maturing industries where cost- and price-cutting dominates over new ideas. Therefore, *continuing* innovation is imperative. In that we have lost almost all indexes of entrepreneurship in the extension of our work into nonmetropolitan areas, we place a high priority on finding new measures of entrepreneurship in small places. We must turn more from *corporate* to *proprietary* invention, innovation, and risk-taking.

Clearly, this logic reinforces our earlier impression that a study-in-depth on the role of the public library in supporting new, small entrepreneurs rates a high priority, and especially in small places that lack a four-year college and may not even have a community college within reasonable commuting distance. The experience of the proposed library consortium in the ten county Ohio Valley Library Area (centered in the Athens-Chillicothe-Portsmouth-Ironton nonmetropolitan region) might be a good place to begin.

## II. An Industrial Profile of Ohio's Federation of Local Economies

For more than 30 years, the conventional way of looking at local economies has been to divide all activity into two parts: the local export base and the local service sector. A local economy typically sells less than half of its output outside of the local labor market and more than half to buyers that live and work within the area. The export sector is the more distinctive part of these "little economies" — auto plants here, breweries there, or perhaps state government dominating the local labor market. The export industries shape the occupation-mix of the local labor market and determine in large measure its educational levels and skills. In sharp contrast, local trade and service businesses — grocery stores, local banks, and small hospitals — use the same skills almost everywhere.

### An Old Index in a New Use

The standard technique used to identify local export industries, and thereby characterize a local economy, is the "location quotient," the percent of local total employment engaged in a given industry, divided by the national percent employed in that industry. If, for example, local employment in meat products manufacturing accounts for one percent of the local total compared to only one-third of one percent of national employment, the local location quotient is 3.0. Assuming that local productivity and local consumption are about average, the local economy, with three times its *pro rata* share of that industry, presumably exports about two-thirds of its production, *on net*.

Gross exports would be larger as the locality exports more than two-thirds of the local brands of its products and imports some other brands to satisfy differences in tastes, especially if the industry produces a highly differentiated product. While gross flows of products may be more important to, say, transportation planners in setting the size of facilities (rails and roads), net exports are the key determinant of the degree to which the distinctive characteristics of a given industry are transferred to, or visited upon, the local community — special skills, water and energy use, and business cycle variations.

But the location quotient is a pure number (ratio) that does not capture the size of the industry being indexed. A small industry must have a much larger LQ than a large one to exert the same effect on a local economy. The motor vehicle industry is twice the size of the rubber and plastics industry group, so it would take an LQ of 4.0 in the latter to equal the leverage of an LQ of 2.0 in the former. Accordingly, we have turned, in the work of identifying the leading local export industries, to an index "invented" thirty years ago, although little used since, to indicate the *number* of workers in a given export industry, above or below that locality's *pro rata* share.[5] The "index of surplus (or excess) workers" subtracts from the absolute number of local workers in a given industry (ei) the number needed to give the locality its *pro rata* share (et/Et) of national employment in that industry (Ei). That is:

$$\mathbf{NSW = ei - (et/Et \times Ei)}$$

where:

NSW = number of "surplus workers"
ei = local employment in a given industry
et = local total employment
Ei = national employment in a given industry
Et = national total employment

The leading export industries of the 18 metropolitan areas and of the 48 nonmetropolitan counties of Ohio, were computed and ranked according to the Index of Surplus Workers.[6] Location Quotients for each industry were also derived to give added perspective. To simplify our first *industrial* view of the Ohio *federation of local economies*, we have summarized our findings in Table 2, by organizing the 65 areas into five broad size-classes:

1. Metropolitan areas of over 1 million population;
2. Metropolitan areas of ½ to 1 million population;
3. Metropolitan areas of ¼ to ½ million population;
4. Metropolitan areas of less than ¼ million population;
5. Nonmetropolitan counties.

Finally, as a further aid to seeing the broad outlines of this mass of data, we have derived a summary "score" by assigning a value of 4 to first rank in the local export base, a value of 3 to second rank, 2 points to third rank, and one point to fourth rank. The number of first rank positions for each industry are enclosed in parentheses.

## Identifying the Leading Export Industries

While the focus here is on the smaller places in Ohio, a few brief comments on the industrial base of metropolitan areas of over one-half million broadens the perspective. Besides, industrial analysis was not a part of the earlier article, which was limited to the occupational approach.

### *Large Metropolitan Areas*

The export base of the largest metropolitan areas in Ohio is dominated by durable goods manufacturing, especially transportation equipment and nonelectrical machinery, very much like all of Ohio. The difference is that electrical machinery does not occupy any of the first four rankings in the export base of any of the seven metropolitan areas of over one-half million population. Indeed, electrical machinery does not show high rank until we reach the population-size class of less than one-quarter million, where it joins other durables in a roughly five-way tie for highest rank.

One-third of the leading export industries in the largest size-class of over one million population are service industries, the highest proportion in any of the five classes. Thus, if large places are poorly represented in fast-growing electrical machinery, they are at least in a better position to capitalize on the fast-growing services.

### *Medium-Sized Metropolitan Areas*

One of the most arresting, and perhaps eventually more instructive, findings is that all four Ohio metropolitan areas of between one-quarter and one-half million population — Canton, Hamilton-Middletown, Huntington-Ashland,and Lorain-Elyria — report the primary metal industries as their largest *basic*, or local export industry. And this set has almost no representation, in high rank, in the nonmanufacturing sector. No other size-class even approaches such industrial homogeneity.

The direction of causation is surely *less* that medium size places attract primary metals *than* that this heavy industry group tends to build places of close to one-half million population or more. Blast furnaces, rolling mills, foundries and other basic metal industries tend to create very large plants to take advantage of extensive internal economies of scale, and also attract supporting suppliers and customers — stimulate industrial *agglomeration*. Even casual reflection suggests some support for this hypothesis, e.g. Gary, Indiana, and Birmingham, Alabama, are within the Youngstown-Warren population size class. And the agglomerative tendencies reach from primary metals into fabricated metals, generating a second, third, and fourth rank standing in Canton, Lorain-Elyria, and Hamilton-Middletown, respectively.

It is only a slight exaggeration to characterize these four middle-size metropolitan areas as primarily metal-making and metal-bending economies, with important transportation equipment manufacturing in Lorain-Elyria and Hamilton-Middletown and paper-making in Hamilton-Middletown (second rank) and Canton (fourth rank). If the economics of the steel industry is changing toward smaller mills and less agglomeration around mills, these four steel cities may have become industrial anomalies, and face the hardest industrial reconversions. While much more analysis in depth would be required to establish this, the big-steel-four (plus Steubenville-Weirton and Wheeling in the next size-class) would seem to share similar reindustrialization problems.

### *Small Metropolitan Areas*

The export sector of the small metropolitan areas in Ohio is much more varied from place to place, but only within durable goods manufacturing. Most notable is the weak showing of the machinery industry, with none of the seven small metropolitan areas reporting this industry in first rank, only one in second-rank (Springfield), and one in third-rank (Lima). A promising study-in-depth would be to examine the apparent bi-modal distribution of the machinery industry, which, at least in Ohio, splits between a strong position in the industrial base of the largest metropolitan areas (first rank in Cleveland and Dayton, third rank in Cincinnati and Akron) and is the leading export industry in the non-metropolitan counties of Ohio.

But industrial specialization is more the rule within these small metropolitan areas. Only Mansfield assembles four export industries each of which employs 10 percent or more of total local export employment and only Parkersburg-Marietta reports three industries each of which reaches that level of export-base importance. Four places have only two export industries that account for 10% of area exports, and Steubenville-Weirton concentrates over 80% of local export employment in one industry: primary metals.

The industrial specialization of small metropolitan areas is made more notable by the fact that nonmetropolitan counties report 22 counties with four or more industries with 10% or more of the export base, 14 counties with three industries, and only 12 counties (one-quarter) with only two strong export industries. In sum, the non-metropolitan counties seem to be more diversified than the small metropolitan areas. This unexpected finding deserves more study.

*Nonmetropolitan Counties*

The forty-eight nonmetropolitan counties of Ohio, not surprisingly, present a complex tapestry of industrial patterns. Sorting them out would be a major project, and would best await a careful delineation of Ohio's nonmetropolitan economies. Perhaps the most important lesson learned in this first pass through the nonmetropolitan area of Ohio is that counties can only be a first approximation of local economies below metropolitan area size. Most often, small clusters of nonmetropolitan counties are the counterpart of the typical two-or-more-county aggregation that defines the local labor market — job commuting radius — upon which metropolitan economies are founded.

The openness of a nonmetropolitan county to in-and-out commuting is reflected directly in the geographic mobility data of the 1980 *Census of Population* and indirectly in the discrepancy between the resident employment figures in the *Census of Population* and the place of work figures from the *County Business Patterns.* If we wish to be able to draw on both sets of data in our analysis of a local economy, we need to aggregate county data until we have about closed the local economy to in-and-out commuting, i.e. have brought home and place of work together in the same geographical area.

By internalizing residential and place of work data, we can draw on the more detailed data of *County Business Patterns,* often reported precisely at the SIC 3-digit level and reported approximately as an employment range at the SIC 4-digit level. Moreover, because *CBP* data is reported annually with only a two year lag, we can keep up better with recent events and long run structural changes.

The importance of updating industrial data is greater the smaller the size of the place. Small size tends to produce not only a narrower set of local export industries but increases the probability that a single large firm will dominate the local economy, further increasing local vulnerability to economic change. Even trading one large establishment (industry) for another can be traumatic, as the skills in demand may change radically. Again, our occupational approach is complementary because even if the same firm stays on, a local production facility may be moved out (abroad) while the local headquarters expands, shifting the demand for labor from blue- to white-collar skills.

To illustrate, our aging 1980 data shows chemicals in first place in the export base of Union County and relegates transportation equipment to a distant fifth place. Union County has since become the home of Honda of Japan. Another example is Hancock County (Findlay) which has lived in fear of the relocation of a former *Fortune* 500 headquarters (Marathon Oil). We place a high priority on integrating the annual *County Business Pattern* data into our work.

## Spatial Patterns of Industry In Ohio

The Index of Surplus Workers was used above to quantify the importance of a given industry to a given place. This index can also be used to measure the converse — the importance of a given place to a given industry. We could, instead of profiling the various industries that form the base of a local economy, sketch the spatial pattern of an industry across the many local economies of a state.

*Trucking and warehousing*

The absolute number of workers in trucking and warehousing above the local *pro rata* share were computed for each of the 18 metropolitan areas and the 48 nonmetropolitan counties of Ohio. If we assume, for example, that, of the 778 workers employed in trucking and warehousing in Muskingum County, 519 were absorbed in servicing the local population (the national average 1.58 percent times total local employment), then 259 workers were by inference freed to service outside activity, that is, were "export workers."

The Ohio places that had in 1980 much more than their share of trucking and warehousing workers are shown at right:

| **Metropolitan areas:** | **Number of Surplus workers** | **% of total surplus workers** | **Location quotient** |
|---|---|---|---|
| Akron | 2,788 | 5.5 | 1.62 |
| Toledo | 2,516 | 5.5 | 1.49 |
| Columbus | 2,116 | 4.3 | 1.27 |
| Cincinnati | 2,006 | 2.0 | 1.21 |
| Youngstown-Warren | 1,019 | 2.1 | 1.31 |
| Hamilton-Middleton | 816 | 3.7 | 1.48 |
| Canton | 677 | 2.0 | 1.25 |
| Lima | 355 | 2.0 | 1.25 |
| Springfield | 344 | 2.8 | 1.29 |
| Mansfield | 236 | 1.9 | 1.27 |
| Nonmetropolitan areas: | | | |
| Wayne | 395 | 3.9 | 1.57 |
| Darke | 288 | 5.3 | 1.81 |
| Muskingum | 259 | 3.8 | 1.50 |

Akron and Toledo stand out as the two leading centers of trucking and warehousing in Ohio, and are also the two places with the greatest concentration of their export employment in this activity (5.5 percent of all export employment). Not only are Akron and Toledo important to trucking and warehousing but trucking and warehousing are unusually important to Akron and Toledo. This activity is almost as important to Hamilton-Middletown but this place is not nearly as important to the activity.

In general, being at the intersection of two or more Interstate Highways is critical to becoming a major center of trucking and warehousing. But in nonmetropolitan Ohio, none of the leading (secondary) centers of trucking and warehousing is at such an intersection, and the one nonmetropolitan county that is at such an intersection (Guernsey) had not, by 1980, established itself as a significant center of trucking and warehousing.

*Wholesale trade*

The spatial pattern of wholesale trade is very different, probably showing both the greater importance of large scale operations and proximity to other business in wholesaling. All three of the largest metropolitan areas in Ohio, and only these three places, stand out as major centers of wholesale trade, as shown above.

| **Metropolitan areas:** | **Number of surplus workers** | **% of total surplus workers** | **Location quotient** |
|---|---|---|---|
| Cincinnati | 4,624 | 6.5 | 1.18 |
| Cleveland | 4,098 | 3.5 | 1.11 |
| Columbus | 2,158 | 4.4 | 1.10 |
| **County:** | | | |
| Muskingum | 410 | 6.0 | 1.29 |

The only important nonmetropolitan, or secondary center, of wholesale trade to be identified with this statistical technique, from the 1980 data, was Muskingum County. But clearly wholesaling was more important to Muskingum than this place was to the wholesale trade industry. In fact, if we were to choose a location quotient of, say, 1.2 as the minimum level at which we are reasonably confident that export status of an industry has been established, then none of the Big Three metropolitan areas are clearly major wholesale trade export centers, with the possible exception of Cincinnati which exhibits a borderline location quotient of 1.18. We find a clear distinction in locational pattern between the physical movement and storage of goods and the management and paperwork involved in transferring the title to goods from sellers to buyers.

We have not as yet had time to reflect in depth on the policy implication of this first pass at the spatial pattern of wholesaling, trucking, and warehousing in the economic development of *federated* Ohio. We do note, however, the striking absence of major centers of this activity in the southeastern part of the State, despite the presence of major Interstate Highways in this area, both east-west (I-70) and north-south (I-77). We note also that Muskingum

County is the only nonmetropolitan county that shows significant exports in wholesale trade and is a significant center for that industry in Ohio, and is one of only three nonmetropolitan counties that stands out in trucking and warehousing. And neighboring Guernsey County occupies a strategic position at that Interstate intersection.

All of this suggests to us the merit of further research in greater depth on the potential of Guernsey and Washington Counties as centers of, if not wholesaling, at least of the smaller scale trucking and warehousing. Interstate Highway 77 is the principal route from industrial Ohio to the industrial centers of the South Atlantic States, and on into the fast-growing Florida consumer goods markets.

In general, we see considerable potential in the use of the Index of Surplus Workers in mapping spatial patterns of other industries, especially service industries that market in contiguous hinterlands — finance, business services, hospitals, and other "central place" activities that can be important export activities of small cities and even towns.

## III. Toward Integrating Industrial and Occupational Analysis

The full potential of both our new occupational-functional analysis and the conventional industrial analysis is not achieved until the two are brought together in an integrated framework. For example, framing a matrix of industry columns and occupational rows sharpens insights into the way in which local economies change their economic base from old to new industries by moving along occupational rows or change occupations by shifting to new functions within an industry (column).

We take a major step in this direction here by manipulating the unique 1980 Census data for occupations by industry. For all the Ohio metropolitan areas of over 250,000 population and for selected other areas, we have derived from *national* data the proportion of total employment engaged in selected occupations, beginning with natural scientists, science technologists, engineers and engineering technicians, for each of the various industries covered in the Census. Next, we have derived the proportion of total *local* employment in each local industry. Finally, the fraction of *local* employment in each industry is multiplied by the national occupational coefficients for each industry and these products are summed to produce a local industry-weighted-average occupational norm for each of the occupational classes selected. For example,

$$\text{Expected \% employed as engineers locally} = \sum_{i=1}^{i=n} \text{National average \% employed as engineers in the } i\text{th industry} \times \text{Fraction of local employment in the } i\text{th industry}$$

In short, we have generated an *expected* percent of total local employment that will be engaged as engineers, assuming that the place has performed in an average way. We can then compare this expected value with the national all-industry average proportion of engineers to determine whether the local economy has an industry-mix that leans significantly toward or away from the "engineering-rich" industries. With this local industry-mix-adjusted estimate in hand, we can then determine, from local occupation data, whether the local economy has in fact produced a proportion of engineers that is greater or less than expected. That is, does the locality out-perform this expectation, or is it an underachiever in engineering, given its industry-mix?

Reversing the logic, an overall level of engineering greater than national average may be due to an engineering-rich set of industries, or to a concentration of the engineering function in that place, overachieving in industries that are only average in engineering orientation. Perhaps both are true: the local economy has an engineering-rich mix of industries and out-performs even that high expectation. Or a place could fail to meet even a weak expectation. State policy on education and research would best be based on, not just which places are strong (weak) in science and engineering, but also why they lead (lag).

## Ashtabula County as a Case Study

Ashtabula County was selected as a case study for several reasons. First, the *1980 Census of Population* data show only a modest amount of in- or out-commuting from home to work in this county. In 1980 only 9.2 percent of resident employed workers traveled outside the county to work and only 17.0 percent of those locally employed commuted into the county to work. This is far below the statewide nonmetropolitan average out-commuting of 23.0 percent and a little below the in-commuting of 18.1 percent. By internalizing economic activity as much as possible, the analysis can be shifted back and forth between data sets on resident labor force and on place of work, with the assurance that the target area is indeed a true *local economy*.

Second, this nonmetropolitan space nestled between the Cleveland-Akron-Lorain consolidated metropolitan area and the Youngstown-Warren area is an especially attractive piece in the puzzle of federated Ohio. Given our interest in stitching together a border-to-border "economic topographic map of Ohio," Ashtabula County nicely fills in a gap in the fabric — virtually completing the picture of Northeast Ohio.

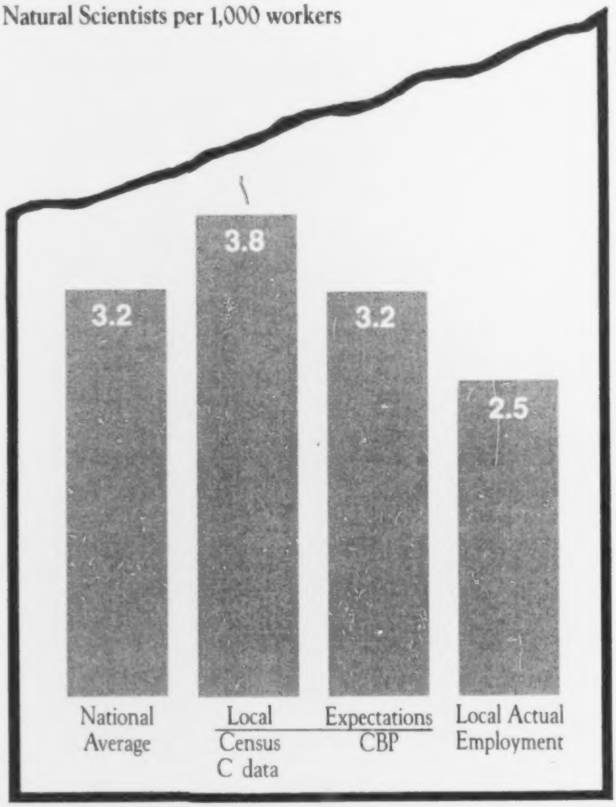
Our first estimate of the technological base of the Ashtabula County economy, as drawn from 1980 data, is as shown below. We have used the industry employment data from both the *1980 Census of Population* (SIC 2-digit) and *County Business Patterns* (3- and 4-digit industries) as the weights for two estimates of the expected levels of employment in these key occupations. We work around the disclosure problems of CBP data by making point estimates from employment ranges, most often by using simple midpoints.

The industry-mix of Ashtabula County "should" have produced 3.8 natural scientists per thousand workers (.38 percent of total employment) based on the Census industry group data, modestly above the national average of 3.2 per thousand, or exactly its share based on the *more detailed* CBP data. But the actual count of only 2.5 natural scientists per thousand workers fell well short of both expected values

| | Percent of total employment: Local expectation: | | | |
|---|---|---|---|---|
| **Occupation** | **National avg.** | **Census "C"** | **CBP** | **Local actual employ.** |
| Natural scientists | .32 | .38 | .32 | .25 |
| Engineers | 1.42 | 1.80 | 1.83 | 1.16 |
| Science technologists, except health | .19 | .37 | .35 | na |
| Engineering technicians | .94 | 1.08 | 1.08 | na |
| All technologists & technicians, exc. health | 2.06 | na | na | 1.19 |
| (na = not available) | | | | |

Ashtabula County

Natural Scientists per 1,000 workers



and the national average. Again, Ashtabula had the "right" industries to do a more than average amount of engineering work — an expected 18.0 to 18.3 per thousand relative to the national average of 14.2 — but fell far short of this norm with only 11.6 per thousand. These first estimates suggest that Ashtabula needs an occupational-functional (science and engineering) policy at least as much as an industrial policy, one emphasizing high school science and State support of higher education in Ashtabula.

The Ashtabula economy showed in 1980 an industry-mix that *promised* a slightly above average proportion of engineering technicians (1.08), and double the average proportion of science technologists (between .35 and .37, relative to .19). Unfortunately, the 1980 Census data on employment by industry does not include data on detailed occupations for areas of less than 250,000 population, therefore we cannot get local data on the actual employment of engineering technicians separate from science technologists to compare to those expected values. But local employment in the broader class of "technologists and technicians, except health" of 11.9 fell far short of both the national average of 20.6 and the local expected figure of between 14.3 and 14.5. This suggests significant unexploited opportunities in middle-level technical training.

We admit to some surprise in finding such close correspondence between the two estimates in the expected values of three of the four "high-tech" occupations. Only the industry-mix-adjusted expectation for natural scientists changes significantly, from .38 percent to .32 percent, by using the more detailed *CBP* data. Apparently, there are cases in which the analyst can work with the Chapter C SIC two-digit data and get usable results. But we have found many more cases in which the analyst is not so lucky: major revisions followed from more detailed industry data. The key is whether the local 3-digit industry-mix inside of the over-arching 2-digit industry group closely approaches the group average, either by chance or because there is very little variation in the detailed industry occupation coefficients within the major industry group. This is important because it is much more demanding to work with the *CBP* data for small places lacking *Chapter D* data.

We expect to find that, in general, the more detailed *CBP* estimates are superior to the *Chapter C* data from the *1980 Census of Population*. This latter data reports employment by "industry group," that is, disaggregated only to the two-digit level of the Standard Industrial Classification, and even then *Chapter C* includes only four nondurable industries and lumps the remainder (paper, petroleum, rubber and leather) into "other nondurables." This is especially uncomfortable in the Ashtabula case because rubber and plastics is a major local industry and is not one of the separately identified nondurables.

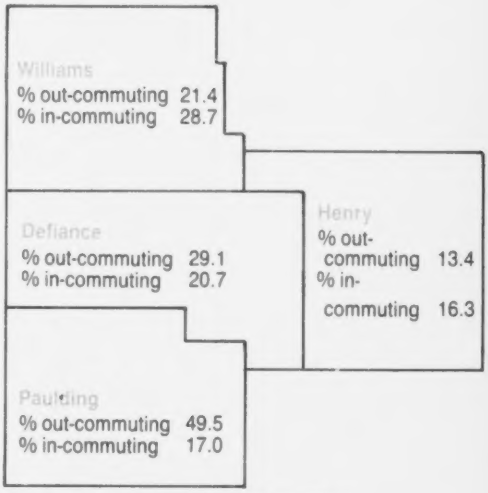
Moreover, by using more detailed industry data from the *CBP*, one can in turn use more detailed occupation data by industry — the *Census of Population* disaggregates these occupational coefficients down to about the SIC 3-digit level — breaking down "food and kindred products" into "meat products" and "beverage industries" and so forth.

## The Northwest Ohio Cluster of Four Counties

This same technique was applied to the Northwest corner of Ohio. Again, we were attracted to filling in open space between adjoining Census-defined metropolitan areas. But here one finds a small *collection* of nonmetropolitan counties that appear to form a single local economy. We begin with the fact that the Bureau of Census decided not to append any of the four counties — Defiance, Henry, Paulding, or Williams — to either of the adjoining metropolitan areas.

Moreover, this four county aggregate is about the same physical size as the neighboring five-county Toledo area and the four-county Lima area, presumably not beyond reasonable commuting range. While this may not prove to be the typical size of a nonmetropolitan economy, this does seem to be a common size, in counterpoint to single-county Ashtabula.

An examination of the commuting data of the *1980 Census of Population (Chapter* C, Table 174 and *Chapter D*, Special Volume on Place of Work, Table 1.) revealed this pattern:



Source: 1980 Census of Population (Chapter D, Special Volume on Place of Work, Table 1).

Clearly, Paulding, with one-half its workers commuting out, is a satellite, probably tied partly to Defiance county and partly to the adjoining Lima metropolitan area. And Henry County is probably linked to the Toledo metropolitan area as well as being a part of a "northwest Ohio nonmetropolitan economy." Williams County, with the least commuting, shows only a little more exchange of labor with its neighbors than Ashtabula County which we have type-cast as a free-standing local economy, and may therefore be more a one-county local economy than an integral part of the cluster. But we are comfortable to begin by treating these four counties as a clearly definable unit of economic space, even if further study shows they are not a single, integrated local economy.

In the table below, we have derived the expected proportion of scientists, engineers, and related technologists and technicians, given the local industry-mix, and compared these hypothetical values to the actual number of workers so employed in each of the counties and to the national average benchmark figures.

All four counties exceeded the national average in expected proportions of engineers, science technologists, and (with one exception) engineering technicians. That is, nonmetropolitan North-west Ohio had in 1980 a good industry-mix for engineering and medium-skill technology. But the industry-mix of these four counties promised only about three-quarters of parity in those industries that draw most heavily on scientists.

But the actual employment of engineers tends to be below one-half the expected and national average levels. This region is not doing much engineering. And only trace amounts of natural science was being performed. Again, all four fall short of achieving the national average level of employment of "technologists and technicians, except health" (the closest we can come to measuring science and engineering technicians). But Henry County in 1980, with 1.65 percent employed as technologists and technicians, except health, came closest to the national average figure of 2.06. That is, the industry-mix in Henry was only average in its inclination toward science and engineering technology (1.16 to 1.13) and below those of its neighbors, but Henry performed much better than expected and better than its neighbors. (Henry County's location quotient of 80 in Table 1c. was the 6th highest of the 48 nonmetropolitan counties.)

## Identifying an Industrial-Occupational Target

Given this weak performance in science and technology, can we use the tools being developed here to identify some modest strength on which to build? Limited by the occupational data, we can turn to industry data to draw some informed inferences about the likely base of Henry County's relatively good performance in technology. In the application of the Index of Surplus Workers to each of the 48 nonmetropolitan counties of Ohio, the leading industry in Henry County was identified as "food and kindred products," accounting for 41.3 percent of all its "surplus workers." And agriculture was in second place, with 20.4 percent of all workers beyond the county's *pro rata* share.

While, nationally, the SIC 2-digit industry group "food and kindred products" exhibits twice the all-manufacturing proportion employed as science technologists (1.0 to 0.5 percent), the SIC 3-digit industry "canning and preserving fruits and vegetables", with 1.4 percent, rises above that strong performance, with almost three times the all-manufacturing average. And recourse to the *1980 County Business Patterns* data allows us to identify canning and preserving as the dominant food industry of Henry county, and more precisely "canned specialties" (SIC #2032). We now infer that Henry County begins from a strong base in that work that assembles and builds intermediate skills in food science and technology. Fur-

| Area | Natural scientists | | Engineers | | Expected %: | | S&E tech. | Actual % all tech except health |
|---|---|---|---|---|---|---|---|---|
| | expected | actual | expected | actual | Sci. technol. | Eng. technic. | | |
| Natl avg. | .32 | .32 | 1.42 | 1.42 | .19 | .94 | 1.13 | 2.06 |
| County | | | | | | | | |
| Defiance | .23 | .21 | 1.76 | 1.07 | .20 | 1.02 | 1.22 | 1.17 |
| Williams | .26 | .04 | 2.16 | .86 | .26 | 1.27 | 1.53 | 1.29 |
| Henry | .25 | .12 | 1.43 | .60 | .27 | .89 | 1.16 | 1.65 |
| Paulding | .24 | .07 | 2.34 | .55 | .20 | 1.17 | 1.37 | .70 |

ther, neighboring Defiance and Williams counties show food products manufacturing to be their third and second ranking export, respectively.

If further analysis were to confirm these first findings, the policy implications could be considerable. The State of Ohio might well look to Northwest Ohio as a major locus for food sciences and technologies, perhaps using the facilities and personnel at Bowling Green State University as a center for associated research and education. Not only is Bowling Green close to the counties mentioned but it is also within easy reach of Sandusky County to the east, where the food industry ranks second.

The commuting distances are short enough between, say, Bowling Green, Napoleon, Defiance and Fremont to support a joint continuing education program. A food sciences curriculum could be incorporated within existing associate degree programs, taught perhaps in various local high schools, with perhaps circuit-riding faculty, evolving into a bachelor's and, later, master's degree program at BGSU. BGSU would seem to be the logical choice because recent research indicates that manufacturing companies tend to rely more on universities for their graduates and continuing education programs than for applied research. And commuting distance is clearly the key factor in continuing education.

Toledo's secondary strength in hospitals (a location quotient of 1.22 and 5th rank in the export base) could provide ancillary support, such as in nutritional studies. Again, the business programs at BGSU and Toledo University might contribute further supporting strength in advertising and marketing through both research and teaching. The food industry of today markets a highly differentiated product, and advertises heavily to shape fads and fashions in food — for example, health foods, fast foods, and easy-to-prepare "gourmet" foods. A by-product of all of this could be that Greater Toledo would mix a new nondurable good into its largely durable goods base. If the State of Ohio is not already supporting a "food research institute," Northwest Ohio seems, not just a good choice, but its best choice.

*Blue Collar Skills*

This same approach can be used to probe into blue collar skills. The national average (expected) proportions of local employment performing high-skill work in precision production operations, middle-skill work as machine operators or as "fabricators and assemblers," and low-skill work as "handlers and helpers" has been computed for all of the SIC 3-digit industries. With some effort, the expectations of each Ohio metropolitan area or nonmetropolitan county (or collection of counties) could be derived for each of these four blue collar occupations.

Even though the statistical technique would be the same as in the science and technology analyses above, the policy perspective would be very different. The interest above lies more in setting directions for policy and planning in the knowledge-based industries, to lead the way to local economic development. The skill analyses would center more on matching the local demand for blue collar labor with the supply — full employment policy and manpower planning.

The heavy investment already made in learning how to refine local employment data and in deriving the occupational coefficients for the many industries, offers for the future a much speedier processing of the data for other local economies in Ohio. A full mapping of blue collar work across Ohio promises better strategies and practices in state resource allocation for skill centers, vocational education programs, and counselling and assistance in worker retraining and relocation.

## IV. Concluding Notes on Politics and Organization

Under mounting experience and reflection, we have become ever more impressed with the potential value of the political-organizational by-products of our work. The conventional industrial approach to state and local economic development expresses well, perhaps best, the traditional perspectives of mainstream economists and therefore speaks most clearly in the language of departments of commerce, economic development, and public works. The new occupational-functional approach is closer to the hearts and minds of labor economists and sociologists and therefore to departments of labor, employment security, and education.

Bringing these two conceptual frameworks together can provide a common language, integrated data bank, and even shared vision of state and local development goals. We would argue that, while it would be better to begin with the various interested departments working in close concert, absent that, our combined and integrated approach would help bring diverse agencies together — become a means to that elusive end of inter-agency cooperation. Certainly, strong leadership would help, especially if exercised at the highest levels of government, such as the Governor's Office. The whole can indeed be greater, but is too often less than, the sum of the parts. This study has been directed toward and is dedicated to the objective of positive reinforcement — synergism — in inter-agency state and local economic development policy, planning, and management.

## Notes

1. Thompson, Philip R. "Toward an economic-topographic map of Ohio: The seven largest metropolitan areas. *Ohio Economic Trends Review* (1986) 1(3): 1-22.

2. Thompson, Wilbur R. & Philip R. Thompson. "Alternative Paths to the Revival of Industrial Cities," in *The Future of Winter Cities*, pp. 233-250. Beverly Hills, California: Sage Pub. Inc., 1987.

3. Thompson, Philip R. "American entrepreneurship, innovation, and the public library." *Wilson Library Bulletin* (October 1984): 124-126.

Thompson, Philip R. "Public bureaucrat and private entrepreneurs: Paths that cross in Newark. *Rutgers Alumni Magazine* (February 1986): 17-19.

Thompson, Wilbur R. & Philip R. Thompson. "Alternative paths to local economic development: Insights into Strategies for Northeast Ohio." In *Economic Transition in an Urban Industrial Region* (edited by Richard Bennett and David L. McKee) pp. 58.84. New York: Praeger, 1987.

4. Philip R. Thompson, "An economic profile of the Canton-Massillon metropolitan area." 1986, unpublished. 34p.

5. Mattila, John M. & Wilbur R. Thompson, "The measurement of the economic base of the metropolitan area," *Land Economics* (1955) 31(3): 215-228.

6. Available on request from *Thompson Associates*, 1820 Camino Raso NW, Albuquerque, NM 87107

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Table 1a.: Occupational-Functional Profiles of Ohio Metropolitan Areas of Between 250,000 and 500,000 Population, 1980-82.

| | (Location Quotients Rank N = 71**): | | | |
|---|---|---|---|---|
| **Development path and criteria** | **Canton LQ (Rank)*** | **Hamilton Middletown LQ (Rank)*** | **Huntington-Ashland LQ (Rank)*** | **Lorain-Elyria LQ (Rank)*** |
| **Entrepreneurship:** | | | | |
| % self-employed, excluding agriculture | 80 | 71 | 82 | 62 |
| % self-employed | 72 (54) | 65 (63) | 70 (56) | 59 (70) |
| % authors | 40 (40) | 60 (22) | 22 (53) | 10 (66) |
| % designers | 86 (35) | 72 (54) | 74 (52) | 85 (39) |
| % manufacturing establishments with <20 employers | 96 | 91 | 95 | 93 |
| Inc. private 500, 1985 | 0 (47-71) | 0 (47-71) | 18 (21) | 0 (47-71) |
| Public library expenditure/population | $124 | 86 | 23 | 116 |
| **Central Administration:** | | | | |
| CAO % of manufacturing employment | 146 (11) | 165 (9) | 166 (8) | 35 (36) |
| CAO % of total employment | 212 | 198 | 172 | 48 |
| % managers in marketing | 107 (13) | 121 (4) | 89 (34) | 102 (18) |
| % technical writers | 20 (52) | 41 (40) | 20 (58) | 20 (65) |
| % of employed females in management | 77 (63) | 85 (46) | 84 (55) | 85 (52) |
| % of employed blacks in management | 59 (68) | 116 (26) | 92 (40) | 87 (47) |
| % in commercial research | 265 (30) | 277 (26) | 116 (68) | 173 (53) |
| % working in advertising | 114 (5) | 57 (41) | 47 (50) | 25 (67) |
| % executives, administrators & managers | 86 | 91 | 86 | 77 |
| Fortune 500 | 143 (11) | 317 (2) | 155 (9) | 0 (26-71) |
| Fortune 2nd 500 | 226 (8) | 0 (27-71) | 0 (27-71) | 0 (27-71) |
| Fortune Service 500 | 2 (13) | 50 (5) | 0 (14-71) | 0 (14-71) |
| Foundation assets/population | $203 | 28 | 6 | 29 |
| **Research and Development:** | | | | |
| % natural scientists | 67 (48) | 89 (32) | 70 (46) | 51 (61) |
| % scientists | 53 81 | 81 | 50 | 50 |
| % engineers | 127 (19) | 150 (11) | 85 (41) | 107 (31) |
| Ph.D.s in science & engineering | 0 (24-71) | 90 (14) | 0 (24-71) | 0 (24-71) |
| **Precision Operations:** | | | | |
| % 4 yrs. college | 68 (67) | 87 (42) | 62 (70) | 67 (68) |
| % high school graduates | 127 (38) | 150 (4) | 85 (67) | 107 (39) |
| % technologists & technicians | 87 (49) | 98 (32) | 78 (61) | 97 (29) |
| % precision production workers | 124 | 128 | 115 | 150 |
| Ratio of precision to routine workers | 71 (68) | 91 (43) | 96 (37) | 81 (59) |
| % home owners | 113 | 108 | 112 | 114 |
| **Routine Operations:** | | | | |
| Wages of workers with unemployment insurance | 99 | 111 | 98 | 106 |
| % Machine operators | 155 | 122 | 99 | 143 |
| Female labor participation | 92 (60) | 93 (57) | 74 (70) | 94 (56) |
| Fabricators & assemblers | 142 | 115 | 109 | 222 |
| % Handlers & helpers | 141 | 106 | 147 | 118 |
| % high school graduates | 101 | 97 | 88 | 101 |

*When a range is shown, for example (47-71) under "Inc. private 500, 1985" for Canton, this indicates a tie in rank across that range.

**Rank compared to the 71 U.S. cities with populations of 250,000 to 500,000.

Table 1b.: Occupational-Functional Profiles of Ohio Metropolitan Areas of Less Than 250,000 Population, 1980-82.

(Location Quotients Rank N = 168**)

| Development path and criteria | Lima LQ (Rank) | Mansfield LQ (Rank) | Newark LQ (Rank) | Parkersburg Marietta LQ (Rank) | Springfield LQ (Rank) | Steubenville LQ (Rank) | Wheeling LQ (Rank) |
|---|---|---|---|---|---|---|---|
| **Entrepreneurship:** | | | | | | | |
| % self-employed, excluding agriculture | 82 | 83 | 95 | 85 | 84 | 60 | 75 |
| % self-employed | 104 (61) | 80 (124) | 98 (76) | 77 (133) | 94 (96) | 55 (164) | 79 (147) |
| % manufacturing establishments with <20 employees | 90 | 86 | 97 | 100 | 96 | 71 | 86 |
| Inc. private 500 | 0 (22-168) | 0 (22-168) | 0 (22-168) | 0 (22-168) | 0 (22-168) | 0 (22-168) | 0 (22-168) |
| Public library expenditure/ population | $93 | 131 | 84 | 77 | 72 | 39 | 73 |
| **Central Administration:** | | | | | | | |
| CAO % of manufacturing employees | 11 (70) | 17 (63) | 193 (7) | 0 (75-168) | 0 (75-168) | 16 (65) | 0 (75-168) |
| CAO % of total employees | 17 | 28 | 192 | D | Z | 25 | D |
| % executives, administrators & managers | 75 | 86 | 83 | 92 | 85 | 56 | 75 |
| % employed females in management | 72 (143) | 75 (117) | 79 (132) | 97 (50) | 93 (55) | 62 (161) | 77 (124) |
| % employed blacks in management | 73 (94) | 93 (70) | 133 (36) | 86 (79) | 124 (44) | 37 (155) | 74 (93) |
| Fortune 500 | 0 (23-168) | 0 (23-168) | 0 (23-168) | 0 (23-168) | 0 (23-168) | 0 (23-168) | 0 (23-168) |
| Fortune 2nd 500 | 0 (21-168) | 0 (21-168) | 0 (21-168) | 638 (6) | 0 (21-168) | 0 (21-168) | 0 (21-168) |
| Fortune Service 500 | 0 (15-168) | 0 (15-168) | 0 (15-168) | 0 (15-168) | 0 (15-168) | 0 (15-168) | 0 (15-168) |
| Foundation assets/population | $36 | 88 | 38 | 11 | 11 | 8 | 6 |
| **Research and Development:** | | | | | | | |
| % scientists | 32 | 41 | 81 | 60 | 66 | 43 | 38 |
| % engineers | 83 (72) | 92 (31) | 124 (55) | 94 (52) | 90 (57) | 65 (99) | 52 (127) |
| Ph.D.s in science & engineering | 0 (30-168) | 0 (30-168) | 0 (30-168) | 0 (30-168) | 0 (30-168) | 0 (30-168) | 0 (30-168) |
| **Precision Operations:** | | | | | | | |
| % 4 yrs. college | 55 (163) | 62 (154) | 69 (135) | 70 (132) | 63 (151) | 49 (167) | 58 (161) |
| Ratio of precision to routine workers | 68 (160) | 72 (157) | 99 (83) | 102 (78) | 82 (126) | 89 (110) | 122 (51) |
| % technologists & technicians | 61 (142) | 68 (123) | 140 (26) | 105 (48) | 90 (69) | 51 (157) | 49 (168) |
| % precision production workers | 121 | 140 | 123 | 114 | 135 | 135 | 102 |
| % home owners | 119 (2-5) | 112 (23-33) | 115 (10-16) | 116 (17-22) | 109 (43-53) | 117 (10-16) | 111 (34-42) |
| **Routine Operations:** | | | | | | | |
| Wages of workers with unemployment insurance | 99 | 97 | NA | 97 | NA | 116 | 94 |
| % Machine operators | 149 | 113 | 113 | 114 | 134 | 139 | 100 |
| Female labor participation | 97 (111) | 98 (99) | 96 (121) | 85 (157) | 94 (129) | 72 (168) | 79 (164) |
| Fabricators & assemblers | 255 | 123 | 123 | 97 | 185 | 110 | 72 |
| % Handlers & helpers | 117 | 121 | 121 | 128 | 99 | 203 | 141 |
| % high school graduates | 102 (76) | 99 (75) | 102 (90) | 99 (93) | 98 (104) | 94 (120) | 95 (118) |

*When a range is shown, for example (22-168) "Inc. private 500" for Lima, this indicates a tie in rank across the range.

**Rank relative to the 168 Ohio metropolitan areas with population less than 250,000

Table 1c: Occupational-Functional Profiles of Ohio Nonmetropolitan Counties, 1980-82.

| | | Location Quotients: | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Development Path and Criteria** | **U.S. index** | **Adams** | **Ashland** | **Ashtabula** | **Athens** | **Brown** | **Clinton** | **Columbiana** |
| **Entrepreneurship:** | | | | | | | | |
| % self-employed, excluding agriculture | 6.84 | 117 | 92 | 77 | 65 | 109 | 83 | 76 |
| % manufacturing establishments with <20 employees | 65.8 | 86 | 90 | 74 | 122 | 91 | 54 | 89 |
| % service establishments with 1-4 employees | 9.75 | 559 | 263 | 240 | 207 | 310 | 212 | 190 |
| Public library expenditure/population | $ 9.77 | 29 | 92 | 73 | 41 | 67 | 183 | $ 67 |
| **Central Administration** | | | | | | | | |
| *Fortune* 500, 1983 | | | | | | | | |
| *Fortune* 2nd 500, 1982 | | | | | | | | |
| % executives, administrators & managers | 10.38 | 55 | 71 | 73 | 73 | 59 | 68 | 59 |
| Foundation expenditure/population | $12.61 | 0 | 0 | 38 | 0 | 0 | 0 | $ 0 |
| **Research and Development** | | | | | | | | |
| % scientists | 0.79 | 24 | 57 | 32 | 128 | 32 | 24 | 19 |
| % engineers | 1.42 | 26 | 76 | 82 | 41 | 100 | 83 | 68 |
| **Precision Operations:** | | | | | | | | |
| % 4 years college | 14.8 | 36 | 84 | 55 | 137 | 47 | 73 | 57 |
| % technologists & technicians | 2.06 | 75 | 71 | 58 | 86 | 24 | 73 | 86 |
| % precision production workers | 4.36 | 99 | 148 | 146 | 169 | 137 | 118 | 158 |
| % home owners | 64.4 | 116 | 116 | 117 | 101 | 119 | 108 | 119 |
| **Routine Operations:** | | | | | | | | |
| % Machine operators | 6.10 | 133 | 192 | 204 | 76 | 179 | 163 | 175 |
| % Fabricators & assemblers | 3.20 | 175 | 170 | 153 | 50 | 233 | 176 | 177 |
| % Handlers & helpers | 4.49 | 137 | 112 | 115 | 100 | 118 | 119 | 176 |
| % high school graduates | 69.0 | 69 | 100 | 95 | 98 | 77 | 93 | 91 |
| % < 5 years of school | 3.6 | 101 | 31 | 56 | 36 | 59 | 50 | 45 |

| | Location Quotients: | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Development Path and Criteria** | **Coshoc-ton** | **Craw-ford** | **Darke** | **Defi-ance** | **Erie** | **Fay-ette** | **Gallia** | **Gern-sey** |
| **Entrepreneurship:** | | | | | | | | |
| % self-employed, excluding agriculture | 65 | 74 | 95 | 69 | 56 | 97 | 83 | 80 |
| % manufacturing establishments <20 employees | 83 | 79 | 92 | 87 | 84 | 69 | 106 | 135 |
| % service establishments 1-4 employees | 167 | 182 | 229 | 162 | 147 | 276 | 111 | 127 |
| Public library expenditure/population | 105 | 80 | 87 | 77 | 146 | 86 | $ 97 | 52 |
| **Central Administration** | | | | | | | | |
| *Fortune* 500, 1983 | | | | | | | | |
| *Fortune* 2nd 500, 1982 | | | | | | | | |
| % executives, administrators & managers | 63 | 74 | 61 | 73 | 87 | 64 | 71 | 74 |
| Foundation expenditures/population | $171 | 0 | 0 | 0 | 0 | 27 | $ 0 | 0 |
| **Research and Development** | | | | | | | | |
| % scientists | 91 | 7 | 20 | 27 | 49 | 23 | 24 | 53 |
| % engineers | 65 | 78 | 66 | 76 | 90 | 36 | 73 | 80 |
| **Precision Operations:** | | | | | | | | |
| % 4 years college | 60 | 51 | 53 | 74 | 77 | 49 | 59 | 55 |
| % technologists & technicians | 60 | 50 | 36 | 57 | 59 | 35 | 55 | 102 |
| % precision production workers | 138 | 161 | 123 | 126 | 135 | 109 | 101 | 79 |
| % home owners | 119 | 113 | 119 | 121 | 112 | 102 | 118 | 117 |
| **Routine Operations:** | | | | | | | | |
| % Machine operators | 212 | 178 | 182 | 203 | 145 | 143 | 76 | 140 |
| % Fabricators & assemblers | 132 | 267 | 287 | 169 | 208 | 120 | 97 | 190 |
| % Handlers & helpers | 148 | 131 | 122 | 168 | 123 | 154 | 122 | 107 |
| % high school graduates | 93 | 95 | 92 | 97 | 99 | 83 | 80 | 89 |
| % < 5 years school | 28 | 45 | 22 | 53 | 47 | 56 | | |

| | Location Quotients: | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Development Path and Criteria** | **Hancock** | **Hardin** | **Harrison** | **Henry** | **Highland** | **Hocking** | **Holmes** | **Huron** |
| **Entrepreneurship:** | | | | | | | | |
| % self-employed, excluding agriculture | 76 | 75 | 86 | 80 | 114 | | | |
| % manufacturing estimated < 20 employees | 93 | 91 | 107 | 108 | 85 | 75 | 133 | 66 |
| % service estimated 1-4 employees | 145 | 110 | 241 | 203 | 378 | 93 | 94 | 77 |
| Public library expenditures/population | $128 | 73 | 99 | 154 | 47 | 42 | 62 | 118 |
| **Central Administration** | | | | | | | | |
| *Fortune* 500, 1983 | | | 102 | | | | | |
| *Fortune* 2nd 500, 1982 | | | | | | | | |
| % executives, administrators & managers | 102 | 62 | 50 | 60 | 61 | 47 | 59 | 72 |
| Foundation expenditures/population | $219 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Research and Development** | | | | | | | | |
| % scientists | 96 | 34 | 29 | 15 | 17 | 64 | 44 | 30 |
| % engineers | 86 | 62 | 54 | 42 | 49 | 48 | 17 | 51 |
| **Precision Operations:** | | | | | | | | |
| % 4 years college | 99 | 70 | 37 | 53 | 46 | 49 | 45 | 60 |
| % technologists, technicians | 75 | 51 | 41 | 80 | 46 | 36 | 27 | 56 |
| % precision production weeks | 107 | 121 | 82 | 115 | 137 | 143 | 114 | 135 |
| % home owners | 116 | 113 | 123 | 120 | 116 | 118 | 117 | 116 |
| **Routine Operations:** | | | | | | | | |
| % Machine operators | 129 | 163 | 114 | 186 | 172 | 209 | 165 | 178 |
| % Fabricators & assemblers | 213 | 295 | 143 | 178 | 224 | 139 | 186 | 231 |
| % Handlers & helpers | 95 | 136 | 155 | 137 | 152 | 173 | 132 | 146 |
| % high school graduates | 110 | 96 | 88 | 94 | 83 | 88 | 62 | 98 |
| % < 5 years of school | 28 | 47 | 53 | 50 | 61 | 31 | 45 | 42 |

| Development Path and Criteria | Location Quotients: Jackson | Knox | Logan | Marion | Meigs | Mercer | Monroe | Morgan |
|---|---|---|---|---|---|---|---|---|
| **Entrepreneurship:** | | | | | | | | |
| % self-employed, excluding agriculture | 85 | 85 | 99 | 64 | 94 | 63 | 88 | 101 |
| % manufacturing estimated < 20 employees | 110 | 93 | 98 | 78 | 110 | 99 | 77 | 110 |
| % service estimated 1-4 employees | 231 | 115 | 200 | 204 | 301 | 244 | 289 | 267 |
| Public library expenditure/population | $ 60 | 92 | 72 | 85 | 25 | 106 | 67 | 61 |
| **Central Administration** | | | | | | | | |
| *Fortune* 500, 1983 | | | | | | | | |
| *Fortune* 2nd 500, 1982 | | | | | | | | |
| % executives, administrators & managers | 77 | 82 | 71 | 82 | 57 | 60 | 41 | 66 |
| Foundation expenditure/population | $ 0 | 29 | 29 | 0 | 0 | 0 | 0 | 0 |
| **Research and Development** | | | | | | | | |
| % scientists | 67 | 40 | 27 | 51 | 41 | 35 | 11 | 87 |
| % engineers | 37 | 81 | 64 | 117 | 78 | 45 | 35 | 35 |
| **Precision Operations:** | | | | | | | | |
| % 4 years college | 53 | 72 | 59 | 67 | 41 | 56 | 40 | 41 |
| % technologists, technicians | 60 | 80 | 60 | 73 | 46 | 35 | 43 | 37 |
| % precision production workers | 98 | 119 | 139 | 123 | 111 | 126 | 78 | 93 |
| % home owners | 117 | 116 | 119 | 114 | 123 | 126 | 126 | 122 |
| **Routine Operations:** | | | | | | | | |
| % Machine operators | 165 | 124 | 180 | 119 | 77 | 208 | 140 | 154 |
| % Fabricators & Assemblers | 110 | 153 | 221 | 264 | 78 | 264 | 104 | 160 |
| % Handlers & helpers | 174 | 101 | 105 | 113 | 153 | 140 | 195 | 124 |
| % high school graduates | 78 | 98 | 95 | 95 | 80 | 92 | 89 | 89 |
| % < 5 years of school | 95 | 73 | 34 | 50 | 70 | 22 | 42 | 45 |

| Development Path and Criteria | Location Quotients: Morrow | Muskingum | Noble | Paulding | Perry | Pike | Ross | Sandusky |
|---|---|---|---|---|---|---|---|---|
| **Entrepreneurship:** | | | | | | | | |
| % self-employed, excluding agriculture | 86 | 76 | 85 | 66 | 76 | 86 | 81 | 73 |
| % manufacturing estimated <20 employees | 93 | 98 | 78 | 110 | 79 | 115 | 103 | 88 |
| % service estimated 1-4 employees | 362 | 148 | 262 | 362 | 235 | 259 | 171 | 189 |
| Public library expenditure/population | $ 38 | 94 | 56 | 38 | 59 | 36 | 73 | 108 |
| **Central Administration** | | | | | | | | |
| *Fortune* 500, 1983 | | | | | | | | |
| *Fortune* 2nd 500, 1982 | | | | | | | | |
| % executives, administrators & managers | 50 | 75 | 44 | 45 | 50 | 62 | 70 | 77 |
| Foundation expenditure/population | $ 0 | 19 | 0 | 0 | 0 | 0 | 0 | 24 |
| **Research and Development** | | | | | | | | |
| % scientists | 42 | 42 | 19 | 9 | 43 | 68 | 64 | 23 |
| % engineers | 46 | 74 | 23 | 39 | 36 | 129 | 81 | 71 |
| **Precision Operations:** | | | | | | | | |
| % 4 years college | 44 | 57 | 40 | 36 | 43 | 58 | 59 | 62 |
| % technologists & technicians | 69 | 68 | 35 | 34 | 66 | 66 | 73 | 52 |
| % precision production workers | 158 | 111 | 100 | 139 | 131 | 123 | 96 | 142 |
| % home owners | 129 | 115 | 122 | 130 | 124 | 112 | 109 | 118 |
| **Routine Operations:** | | | | | | | | |
| % Machine operators | 152 | 120 | 167 | 245 | 200 | 135 | 169 | 177 |
| % Fabricators & assemblers | 288 | 198 | 166 | 262 | 276 | 145 | 132 | 254 |
| % Handlers & helpers | 105 | 138 | 148 | 168 | 160 | 127 | 145 | 122 |
| % high school graduates | 92 | 91 | 92 | 92 | 88 | 76 | 83 | 97 |
| % < 5 years of school | 42 | 34 | 25 | 59 | 51 | 145 | 64 | 67 |

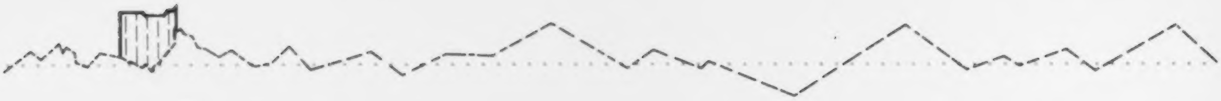
| | Location Quotients: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Development Path and Criteria** | **Scioto** | **Seneca** | **Shelby** | **Tuscar-awas** | **Union** | **Vinton** | **Wayne** | **Will-iams** | **Wyn-adot** |
| **Entrepreneurship:** | | | | | | | | | |
| % self-employed, excluding agriculture | 69 | 59 | 61 | 76 | 85 | 79 | 69 | 74 | 86 |
| % manufacturing estimated < 20 employees | 120 | 77 | 101 | 95 | 57 | 110 | 85 | 69 | 69 |
| % service estimated 1-4 employees | 163 | 158 | 200 | 182 | 377 | 297 | 155 | 170 | 236 |
| Public library expenditure/population | $ 52 | 111 | 103 | 98 | 78 | 51 | 121 | 114 | 99 |
| **Central Administration** | | | | | | | | | |
| *Fortune* 500, 1983 | | | | | | | | | |
| *Fortune* 2nd 500, 1982 | 538 | | | | | | | | |
| % executives, administrators & managers | 77 | 69 | 72 | 74 | 71 | 65 | 74 | 74 | 55 |
| Foundation expenditure/population | $ 0 | 48 | 0 | 17 | 0 | 0 | 0 | 21 | 0 |
| **Research and Development** | | | | | | | | | |
| % scientists | 55 | 25 | 20 | 65 | 61 | 60 | 65 | 6 | 32 |
| % engineers | 55 | 25 | 93 | 58 | 80 | 26 | 56 | 61 | 58 |
| **Precision Operations:** | | | | | | | | | |
| % 4 years college | 48 | 62 | 57 | 53 | 70 | 37 | 85 | 56 | 59 |
| % technologists, technicians | 52 | 58 | 79 | 64 | 125 | 50 | 88 | 63 | 83 |
| % precision production workers | 110 | 139 | 180 | 123 | 144 | 92 | 129 | 166 | 145 |
| % home owners | 112 | 116 | 117 | 119 | 117 | 122 | 114 | 122 | 118 |
| **Routine Operations:** | | | | | | | | | |
| % Machine operators | 83 | 202 | 192 | 173 | 134 | 144 | 147 | 233 | 206 |
| % Fabricators & assemblers | 74 | 248 | 259 | 147 | 196 | 119 | 164 | 257 | 262 |
| % Handlers & helpers | 145 | 140 | 107 | 147 | 114 | 235 | 145 | 128 | 117 |
| % high school graduates | 79 | 96 | 92 | 90 | 100 | 74 | 95 | 99 | 97 |
| % < 5 years of school | 100 | 45 | 47 | 31 | 28 | 81 | 47 | 14 | 34 |

Table 2: Leading Export Industry Groups, Ranked by Number of Workers in Excess of Pro Rata Share, for Five Population-Size Classes that Encompass the State of Ohio, 1980.

| | Cumulative score* (Number of 1st place rankings): | | | | |
|---|---|---|---|---|---|
| | Metropolitan area population: | | | | |
| ***Census of Population*** **industry group (SIC 2-digit)** | **1,000,000 or more** | **1/2-1 mill.** | **1/4-1/2 mill.** | **less than 1/4 mill.** | **non-metro county** |
| Agriculture, fishing, forestry | 0 | 0 | 0 | 0 | 52 (3) |
| Mining | 0 | 0 | 0 | 6 (1) | 42 (3) |
| Construction | 0 | 0 | 0 | 1 | 7 |
| Food products | 1 | 0 | 0 | 0 | 19 (2) |
| Textiles & Apparel | 0 | 0 | 0 | 0 | 2 |
| Printing & publishing | 0 | 0 | 0 | 0 | 1 |
| Chemicals | 4 (1) | 0 | 1 | 4 (1) | 23 (4) |
| Other nondurables | 0 | 6 (1) | 6 | 2 | 52 (6) |
| Wood & furniture | 0 | 0 | 0 | 0 | 13 |
| Primary metals | 2 | 4 (1) | 16 (4) | 8 (1) | 37 (4) |
| Fabricated metals | 1 | 7 | 6 | 8 | 24 (2) |
| Machinery, excluding electrical | 6 (1) | 6 (1) | 2 | 5 | 69 (11) |
| Electrical machinery | 0 | 0 | 0 | 9 (1) | 33 (3) |
| Transportation equipment | 6 | 10 (1) | 5 | 8 (2) | 41 (5) |
| Other durables | 0 | 3 | 1 | 10 (1) | 28 (2) |
| Railroads | 0 | 0 | 3 | 0 | 4 |
| Trucking & warehousing | 0 | 1 | 0 | 0 | 1 |
| Communications | 0 | 0 | 0 | 0 | 2 |
| Utilities | 0 | 0 | 0 | 2 | 13 (1) |
| General merchandise retailing | 2 | 1 | 0 | 0 | 0 |
| Food & bakery retailing | 0 | 0 | 0 | 0 | 1 |
| Eating & drinking places | 0 | 1 | 0 | 1 | 4 |
| Insurance | 4 (1) | 0 | 0 | 0 | 0 |
| Business services | 1 | 0 | 0 | 0 | 0 |
| Schools & colleges | 0 | 0 | 0 | 0 | 7 (1) |
| Hospitals | 0 | 0 | 0 | 2 | 9 (1) |
| Health, excluding hospitals | 0 | 0 | 0 | 0 | 1 |
| Public administration | 3 | 1 | 0 | 2 | 0 |
| Total score (number of first places) | 30 (3) | 40 (4) | 40 (4) | 68 (7) | 485 (48) |

*Cumulative score: Sum of 4 points for each first rank, 3 points for each second rank, 2 points for each third rank, and 1 point for each fourth rank. All industries listed have a "location quotient" of 1.25 or more (i.e. the ratio of local percent employed in a given industry to the national percent in that industry) to ensure against marginal cases of export status.

Source: Derived from the 1980 Census of Population, Chapter C, General Social and Economic Characteristics, Ohio volume, Table 178.



# Middle-market Manufacturing Firms Headquartered in the Cleveland Metropolitan Area

## A Base for Present and Future Economic Development

*Timothy K. Kinsella*

### Introduction

The Cleveland metropolitan area (SMSA) has been long recognized as a large-scale manufacturing headquarters center, a home for the *Fortune* 500. Firms such as TRW, BP America (Sohio), Eaton Corporation, and American Greetings are known throughout the globe. However, during the past decade, this base has begun to erode. Established firms once headquartered here have moved elsewhere, or have been acquired by companies outside the area.[1] This phenomenon is not unique to Cleveland. Other metropolitan areas in the northeast and north central portions of the nation, such as New York and Pittsburgh, face a similar plight.

Despite recent erosion, Cleveland remains strong in manufacturing headquarters. It retains its elite ranking as a center for large-scale firm headquarters. Often overlooked, however, is the presence of a second tier of "middle market," or *Fortune* "Second 500," manufacturing firms. These firms are the primary focus of this article.

It is argued that a major reason for Cleveland's manufacturing headquarter's strength, particularly its concentration of middle-market firms, is the presence of an advanced service complex that has evolved in the area. This complex includes firms with a wide range of expertise, such as legal, accounting, and advertising, that enables headquarters to develop and remain competitive in a national and global economy.

The headquarters function generally is of increasing importance to Cleveland's economic development. It includes the systematic acquisition, organization, and use of information to direct the processes of production and distribution of goods and services around the globe.[2] By adding value, it generates wealth and jobs. The presence of headquarter functions is all the more significant given the drastic decline in routinized production jobs, Cleveland's historic strength.

Large-scale manufacturing firms headquartered in the area are those that qualify for the *Fortune* First 500 Directory of manufacturing firms, published yearly. Rankings are based on sales. In 1986, sales ranged from \$420.2 million to \$102.8 billion. There were ten Cleveland area firms among the first 500 (*Fortune*, 1987). Middle-market firms are those that qualify for the *Fortune* Second 500 Directory of manufacturing firms, published yearly until 1981. At that time, sales ranged from \$122.5 million to \$451.1 million. There were 13 Cleveland area firms that qualified for the second 500 (*Fortune*, 1982). More recent Cleveland area middle-market firm data will be found in industrial publications such as *Moody's* and *Standard & Poors*, company annual reports, and regional publications and their corporate directory listings.

The advanced service complex refers to businesses in the services sector that provide expertise and advice to headquarters for the governance of technology. These include a variety of business services, such as banking, architecture and engineering, business consulting, accounting, advertising and law.

The remainder of this article is separated into four sections (see Appendix A for details on methodology). Large-scale manufacturing firms headquartered in the Cleveland SMSA are examined in the first section. The second section focuses on middle market, or *Fortune* Second 500 firms in Cleveland, the region's strength relative to other metropolitan areas, and Cleveland's

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concentration of headquarters power. Advanced service firms in Cleveland is the subject of the third section. The final section includes implications for development strategy and lessons learned.

Authors have examined the headquarter's function in depth. Gottman (1973, 1979, 1983) studied the rise of abstract transactions performed in city centers which direct the processes of production and distribution. Corey (1987), drawing from Gottman's work, identified a "transactional metropolitan" paradigm.

Knight referred to industrial corporations in city centers as gatekeepers of industrial know how. They provide a wide range of expertise that adds value and increases firm competitiveness in global markets (Knight, 1978, 1982, 1987; Knight and Gappert, 1984).

Pred wrote of the importance of large-scale *Fortune* 500 firms as job providing organizations in the nations's largest urban centers (Pred, 1974, 1977). Noyelle and Stanback examined a growing advanced services center that complements production work by managing, planning, and developing manufacturing resources (Noyelle and Stanback, 1983; Noyelle, 1985; Stanback, 1985; Stanback et. al., 1981). Thompson (1985, 1986) identified the role of central administration as one of several paths to economic development for industrial cities.

Research presented in this article builds on the works of these and other authors. It emphasizes the importance of transactional activities, particularly headquarter functions, but focuses on middle-market firms headquartered in the Cleveland SMSA. Their presence results in large part from the area's advanced service complex.

These firms represent sources of wealth and job creation in central administration activity. They contribute to Cleveland's strength as a headquarters center and the further development of expertise in the management of technology. Their presence, therefore, solidifies an important comparative advantage for the region.

Moreover, middle-market firms headquartered here represent a pool of future large-scale industrial giants that will enable Cleveland to remain a major manufacturing headquarters center. This pool is important in an era of increasing corporate departures from mature industrial regions, and mergers and acquisition by out-of-town firms.

Finally, the local presence of these headquarters means that Cleveland remains a center for corporate decision making. The city, therefore, possesses more control over its economic destiny than if it was purely a place for branch plant operations. Local decision making capacity, moreover, provides an opportunity for the firm to participate more fully in community affairs.

The Cleveland SMSA (Cuyahoga, Lake, Medina and Geauga counties) is the major geographic area of study. It represents a traditional manufacturing center undergoing difficult economic transition, but with a strong manufacturing headquarters base. The time period for this study is 1970 to the present, coinciding with the rise of a global economy and the era of mergers and acquisitions, all of which strongly affect the direction and structure of Cleveland's economy.

## Large-scale Manufacturing Firms Headquartered in the Cleveland Area

The Cleveland SMSA possesses a rich manufacturing legacy. Over time, many manufacturing firms which started here have evolved into industrial giants. The purpose of this section is to briefly describe Cleveland's strength as a large-scale, *Fortune* First 500 headquarters center, changes in this strength over time, and reasons for these changes. This section shows the need to look beyond existing large-scale firms in examining the area's unique manufacturing headquarters strength.

In 1970, 17 *Fortune* First 500 firms were headquartered in the Cleveland metropolitan area (*Fortune*, 1971). Cleveland was the third largest manufacturing corporate headquarters center in the nation, behind New York and Chicago. These firms produced a diverse range of industrial goods, such as coal, steel, mining, transportation vehicle parts, chemicals, paint and printing.[3]

By 1986, Cleveland held ten *Fortune* First 500 manufacturing firms. It now ranks seventh in absolute number. Total sales (in 1982 dollars) amounted to $26.7 billion. Assets (in 1982 dollars) were $29.3 billion. Worldwide employment totaled 244,098 (*Fortune*, 1987). These are substantial totals, but the areas' large-scale manufacturing base has undergone slight erosion in all categories except assets controlled. (See Table 1.)

Comparison with *Fortune* First 500 national totals also reflects a slightly weakened position. (See Table 2.)

Since 1970, five *Fortune* firms have departed the area, including some of which attained First 500 status after that time.[4] Collective strength lost in 1986 as a result of these departures includes sales of $6.9 billion, assets of $6.9 billion, and 62,078 in worldwide

TABLE 1: *Fortune* First 500 Manufacturing Firms Headquartered in the Cleveland SMSA

**1970 and 1986**
**(1982 dollars)**

| | No. of Firms | Sales (bil.) | Assets (bil.) | Worldwide Employment |
|---|---|---|---|---|
| 1970 | 17 | $27.8 | $22.8 | 361,571 |
| 1986 | 10 | $26.7 | $29.3 | 244,098 |
| Percent Change | -41.2 | - 4.0 | + 28.5 | -32.5 |

Source: *Fortune* Directory of the 500 Largest Industrial Corporations, 1971 and 1987.

TABLE 2: Cleveland's *Fortune* First 500 Manufacturing Firm Headquarter Share Relative to the Nation

| | 1970 | 1986 |
|---|---|---|
| Sales | 2.2% | 1.6% |
| Assets | 2.3% | 1.8% |
| Employment | 2.5% | 1.8% |

Source: *Fortune* Directory of the 500 Largest Industrial Corporations, 1971 and 1987

employment.

In addition, five *Fortune* First 500 firms headquartered in Cleveland were acquired by firms outside the area between 1970 and 1986.[5] Some of these acquired firms retain central administration operations in the area, even while control has shifted elsewhere.[6] Others have closed or relocated to other metropolitan areas.[7] One firm was purchased by a larger company, but later repurchased by a private group of investors with headquarters based in Cleveland.[8] Privately-held firms, however, do not qualify for *Fortune* status. Another firm dropped off the *Fortune* First 500 list in 1971, because it no longer was classified as an industrial.[9]

In sum, evidence indicates that the Cleveland SMSA has undergone some erosion in its strength as a large-scale (*Fortune* First 500) manufacturing headquarters center. Despite erosion, firms have remained and continued to develop, as evidenced by increasing asset strength indicated in Table 1. Others recently have joined the ranks of First 500 status. These come from a pool of "middle-market" firms, discussed in the following section. The region, therefore, remains a substantial manufacturing headquarters center.

## Middle-market Manufacturing Firms Headquartered in the Cleveland Area

### *An Overview, 1970-1981*

The purpose of this section is to examine the changing strength of middle-market, or *Fortune* Second 500 firms headquartered in the Cleveland SMSA between 1970 and 1981. These firms play an important role in contributing to Cleveland's continued strength as a major headquarters center and provides a pool for future *Fortune* First 500 candidates.

In 1970, there were 17 firms on the *Fortune* Second 500 list (*Fortune*, 1971).[10] Industrial activity was quite diverse, including mining, rubber products, iron ore production, greeting cards, machine tools, marine transportation, auto vehicle parts, and plastic injection molding. By 1981, there were 13 firms on this list (*Fortune*, 1982).[11] During this period total worldwide employment of Second 500 firms directed from Cleveland declined by 25.6 percent, from 72,631 to 54,008. The local-to-national share declined from 4.60 to 3.40 percent. Assets controlled by these firms increased from $3.41 billion to $3.76 billion (adjusted to 1982 dollars), or 9.3 percent. Local-to-national asset share declined only slightly, from 4.26 to 4.14 percent.

There existed a high degree of "churning" by Cleveland firms in the Second 500 Directory during this time. Most significant is the fact that three firms moved from Second 500 to First 500 status.[12] Another alternated between First and Second 500 status over time.[13] In addition, four firms appeared for the first time on the Second 500 list.[14]

Meanwhile, a total of six *Fortune* Second 500 firms headquartered in Cleveland dropped off the list. One departed the area.[15] Five were involved in mergers or acquisitions with out of town firms.[16] Some of these firms, however, still retain divisional headquarter activities in Cleveland.

### *The Fortune Second 500 Presence in Cleveland and Other Metropolitan Areas, 1981*

The Cleveland SMSA is placed in broader perspective in this portion of the paper by including data on 1981 *Fortune* Second 500 manufacturing strength within other metropolitan areas. Concern is focused on the absolute number of Second 500 firms within each of the 25 largest SMSAs, based on 1980 population totals, and the concentration of headquarters "power" in these areas relative to population size.

*Fortune* Second 500 totals for the largest 25 SMSAs in the nation, based on 1980 population size, are presented in Table 3.

Several findings emerge from an examination of the data. The 25 largest metropolitan areas contained 258 of the 500 *Fortune* Second 500 firms, or 51.6 percent. Meanwhile, their population of 78.1 million comprised 34.5 percent of the nation's total population of 226.5 million people. New York tops the list with 45 *Fortune* Second 500 firms, followed by Chicago (27), the Boston SCSA (24), and Dallas-Fort Worth (20).

The Cleveland SMSA fared quite well particularly relative to its population size. There were 13 *Fortune* Second 500 firms headquartered in the Cleveland SMSA, the seventh largest concentration among the 25 SMSAs. Meanwhile, its poplation size of 1.9 million ranked 19th in the nation.

The absolute number of firms headquartered in Cleveland approximated that of Minneapolis-St. Paul (12) and Houston (14). Meanwhile, Cleveland held more Second 500 firms than other traditional manufacturing centers, including Pittsburgh (8), Detroit (7), St. Louis (7) and Baltimore (3).

TABLE 3: Number of *Fortune* Second 500 in the Top 25 SMSAs, 1981

| SMSA | *# Fortune* Second 500 | Rank | 1980 Population (thousands) | Population Rank |
|---|---|---|---|---|
| New York | 45 | 1 | 9,120 | 1 |
| Chicago | 27 | 2 | 7,102 | 3 |
| Boston* | 24 | 3 | 3,972 | 6 |
| Dallas/Ft. Worth | 20 | 4 | 2,975 | 9 |
| L.A./Long Beach | 18 | 5 | 7,478 | 2 |
| Houston | 14 | 6 | 2,905 | 10 |
| Cleveland | 13 | 7 | 1,899 | 19 |
| Minneapolis/St. Paul | 12 | 8 | 2,114 | 15 |
| San Fran./Oakland | 11 | 9 | 3,253 | 7 |
| Philadelphia | 10 | 10 | 4,717 | 4 |
| Nassau/Suffolk | 8 | 11 | 2,606 | 11 |
| Newark | 8 | 11 | 1,965 | 17 |
| Pittsburgh | 8 | 11 | 2,264 | 13 |
| St. Louis | 7 | 14 | 2,355 | 12 |
| Detroit | 7 | 14 | 4,353 | 5 |
| Atlanta | 7 | 14 | 2,030 | 16 |
| Tampa/St. Petersburg | 3 | 17 | 1,569 | 24 |
| Miami | 3 | 17 | 1,626 | 21 |
| Anaheim | 3 | 17 | 1,932 | 18 |
| Baltimore | 3 | 17 | 2,174 | 14 |
| Washington D.C. | 2 | 21 | 3,060 | 8 |
| San Diego | 2 | 21 | 1,862 | 20 |
| Denver | 2 | 21 | 1,620 | 22 |
| Seattle/Everett | 1 | 24 | 1,607 | 23 |
| Rvsde./San.Bern./Ont. | - | 25 | 1,557 | 25 |
| TOTALS | 258 | | 78,115 | |

*SCSA Population Figure

Source: *Fortune* Directory of the Second 500 Largest Industrial Corporations, 1982; U.S. Bureau of the Census, *County and City Data Book*, 1983; U.S. Bureau of the Census, *Statistical Abstract of the United States: 1981.*

Other metropolitan areas not in the largest 25 SMSAs also performed well. Stamford, Connecticut, held 14 Second 500 firms while its population stood at only 198,854. Two smaller Ohio SMSAs, Dayton and Columbus, held seven Second 500 firms each.

### *The Concentration of Headquarters Power*

The concentration of headquarters power represents another perspective from which to examine Cleveland's comparative middle-market manufacturing headquarters strength. Three attributes are examined which comprise headquarters power in this paper. They include the concentration of sales emanating from Cleveland's *Fortune* Second 500 firms, assets controlled, and worldwide employment directed from these firms. Cleveland is compared with other large metropolitan areas.

Location quotients (LQs) are devised to measure concentration of these attributes in geographic space. The LQ for sales is as follows:

$$\text{LQ} = \frac{\text{SMSA 2nd 500 Sales}}{\text{National 2nd 500 Sales}} \div \frac{\text{Local Population}}{\text{National Population}}$$

LQs for assets and employment are calculated in a similar manner. If the LQ is 1.00, then the concentration of *Fortune* Second 500 sales, assets, or worldwide employment in an SMSA is the same as that for the nation, based on population size. The higher the LQ, the stronger the local concentration, and the more specialized the SMSA in middle-market manufacturing headquarters power. Table 4 provides sales, assets, and worldwide employment LQs for each of the 25 largest SMSAs.

Several findings are of interest. Most significant is the fact that the Cleveland SMSA possesses the highest LQs of all the largest metropolitan areas. The LQ for sales stands at 3.27, meaning that sales emanating from Second 500 firms headquartered in Cleveland were more than three times as concentrated as the nation relative to population size. The assets and employment LQs were even higher, at 4.95 and 4.05 respectively. These figures indicate that the Cleveland SMSA is highly specialized in controlling the use of Second 500, or middle-market, assets and directing worldwide employment. These attributes are important components of knowledge activity, that of directing the processes of production and distribution of goods around the globe.

The Cleveland SMSA fares well relative to other traditional manufacturing centers of comparable size, such as Pittsburgh, St. Louis, and Baltimore, and larger centers, such as New York, Chicago and Philadelphia. The Cleveland SMSA also ranks high relative to mixed manufacturing and service centers, including Dallas, Houston, and Minneapolis-St. Paul.

The highest LQs exist for Stamford, Connecticut, which is not included among the largest SMSAs. LQs are 29.10 for sales, 28.96 for assets, and 27.98 for worldwide employment. This strength is due to the existence of a large number of Second 500 firms tied to New York, but located in a relatively small-sized SMSA.

Table 4: *Fortune* Second 500 Location Quotients for the Top 25 SMSAs in the Nation, 1981

| SMSA | LQ Sales | LQ Assets | LQ Worldwide Employment |
|---|---|---|---|
| New York | 2.20 | 1.94 | 2.34 |
| Chicago | 1.74 | 1.67 | 1.76 |
| Boston2.62 | 2.27 | | 2.48 |
| Dallas/Ft. Worth | 3.10 | 3.61 | 2.32 |
| Los Angeles/Long Beach0.88 | 1.00 | | 0.78 |
| Houston | 2.24 | 3.65 | 1.33 |
| Stamford | 29.10 | 28.96 | 27.98 |
| Cleveland | 3.27 | 4.95 | 4.05 |
| Minneapolis/St. Paul | 2.35 | 2.18 | 2.42 |
| San Francisco | 1.83 | 2.57 | 1.91 |
| Philadelphia | 1.13 | 0.92 | 1.08 |
| Nassau/Suffolk | 1.10 | 0.95 | 1.19 |
| Newark | 1.79 | 1.72 | 1.98 |
| Pittsburgh | 1.70 | 1.54 | 1.93 |
| St. Louis | 1.25 | 1.04 | 1.14 |
| Detroit | 0.69 | 0.70 | 0.65 |
| Dayton | 3.43 | 2.63 | 3.97 |
| Atlanta | 1.85 | 1.27 | 2.35 |
| Columbus | 2.87 | 2.19 | 3.89 |
| Milwaukee | 1.56 | 1.07 | 1.30 |
| Jersey City | 3.92 | 2.71 | 1.00 |
| Washington D.C. | 0.29 | 0.36 | 0.30 |
| Tampa/St. Petersburg | 0.78 | 0.83 | 0.67 |
| Baltimore | 0.82 | 0.59 | 0.56 |
| Miami | 0.57 | 0.43 | 0.63 |

Source: *Fortune* Directory of the Second 500 Largest Industrial Corporations, 1982

### *Cleveland's Present* Fortune *Second 500 Strength*

This portion of the research provides insight into Cleveland's present Fortune Second 500 strength, based on current information sources.[17] The number of Cleveland SMSA firms that would qualify for Second 500 status is estimated for 1985.[18] Data on sales, assets, and worldwide employment of these firms are included. Appropriate comparisons are made with 1981 data.

Adjusting sales figures for firms in the 1981 *Fortune* Second 500 Directory and the 1985 *Crain's Cleveland Business* Directory reveals that 18 Cleveland SMSA firms would qualify for *Fortune* Second 500 status, if that Directory existed today.[19] This represents an increase of six firms over 1981.

Sales for 1985 (adjusted to 1982 dollars) totaled $3.63 billion. Adjusted assets totaled $3.35 billion,[20] while worldwide employment stood at 50,271. When 1981 Cleveland SMSA *Fortune* Second 500 figures are adjusted to 1982 dollars, it is found that collective sales increased slightly, by 7.1 percent. Asset strength and worldwide employment declined by 14.1 percent and 6.9 percent respectively. (See Table 5.)

Between 1981 and 1985, North American Coal (NACCO Industries) moved to First 500 status, followed by Standard Products in 1986. It is expected that two more firms will move up in 1988.[21] One firm departed the Second 500 list.[22]

## Advanced Service Firms in Cleveland

It is argued that the presence of middle-market firms headquartered in Cleveland is influenced substantially by Cleveland's advanced service complex. The purpose of this section, therefore, is to examine this complex and its ties to Cleveland's manufacturing headquarters strength.

TABLE 5: *Fortune* Second 500 Attributes

**Cleveland SMSA**
**1981 and 1985**
**(1982 dollars)**

| | 1981 | 1985 |
|---|---|---|
| Sales | $3.39 billion | $3.63 billion |
| Assets | $3.90 billion | $3.35 billion |
| Worldwide Employment | 54,008 | 50,271 |

Sources: *Crain's Cleveland Business; Moody's Industrials, Standard & Poors*; Company Annual Reports

TABLE 6: Business Service Activity in the Cleveland SMSA
Employment 1970 and 1985

| | Employment 1970 | Employment 1985 | Percent change |
|---|---|---|---|
| Finance, Insurance, Real Estate | 40,193 | 51,328 | 27.7 |
| Miscellaneous Business Services* | 27,877 | 39,302 | 41.0 |
| Legal | 3,004 | 6,419 | 113.7 |
| Miscellaneous Services** | 7,088 | 11,572 | 63.3 |
| Totals | 75,152 | 108,621 | 44.5 |

* Including Business Consulting, R&D Labs, Equipment Leasing, Photofinishing Labs, Commercial Testing Labs, Temporary Help, Business Services not elsewhere classified

** Including Engineers and Architects, nonprofit Research Agencies, Accountants, Services not elsewhere classified

Sources: U.S. Bureau of the Census. *County Business Patterns, 1970*. Ohio CBP-70-37.U.S. Government Printing Office, Washington D.C. 1971; U.S. Bureau of the Census, *County Business Patterns, 1985*. Ohio CBP-85-37.U.S. Government Printing Office, Washington, D.C., 1987.

Employment within the advanced service sector has increased by 44.5 percent between 1970 and 1985. This increase compares with a 31.8 percent decline in manufacturing employment, from 314,143 to 214,130, largely due to the loss of routinized production jobs.

The most significant employment gains have been in legal (113.7 percent), miscellaneous services (63.3 percent), and miscellaneous business services (41.0 percent). Examples of the latter two categories include engineers and architects, advertising agents, accountants and business consultants. (See Table 6.)

Payroll per employee has increased with employment, reflecting in part a deepening of skills within the advanced service firms. Skills upgrading is critical for meeting increasingly complex demands of manufacturing headquarters operating in a global economy. (See Table 7.)

Table 7: Business Service Activity in the Cleveland SMSA

**Payroll Per Employee**
**1970 and 1985**
**(first quarter)**

| | 1970 | 1985 | Percent change |
|---|---|---|---|
| Finance, Insurance, Real Estate | 3,726 | 4,604 | 23.6 |
| Miscellaneous Business Services* | 2,983 | 3,471 | 16.4 |
| Legal | 3,592 | 6,907 | 92.3 |
| Miscellaneous Services** | 4,983 | 5,427 | 8.9 |
| Totals | 3,593 | 4,418 | 23.0 |

* Including Business Consulting, R&D Labs, Equipment Leasing, Photofinishing Labs, Commercial Testing Labs, Temporary Help, Business Services not elsewhere classified

**Including Engineers and Architects, nonprofit Research Agencies, Accountants, Services not elsewhere classified

Sources: U.S. Bureau of the Census. *County Business Patterns, 1970*. Ohio CBP-70-37. U.S. Government Printing Office, Washington D.C., 1971; U.S. Bureau of the Census, *County Business Patterns, 1985*. Ohio CBP-85-37. U.S. Government Printing Office, Washington D.C., 1987. Payroll Figures are adjusted to $1982 utilizing personal consumption expenditures. See Table B4, Appendix B, p. 258, in *Economic Report of the President*. Transmitted to Congress. February 1986. Together with the Annual Report of the Council of Economic Advisors. U.S. Government Printing Office, Washington D.C., 1987.

Overall, payroll per employee increased by 23.0 percent between 1970 and 1985, based on payroll data available for the first quarter of each year. The largest gains were made in legal (92.3 percent) and finance, insurance, and real estate (23.6 percent), which includes banking operations.

In sum, advanced service firms have grown in employment and expertise over time. This complex is critical to middle market headquarter development. The presence of large scale firms headquartered in the region has played an important role in the evolution of the advanced service complex. *Fortune* 500 headquarters have provided numerous opportunities for diverse advanced service firms to develop expertise. As these headquarters grew, they continued to contract out for services of specialized firms.

> *Fortune 500 headquarters have provided numerous opportunities for diverse advanced service firms to develop expertise.*

These firms responded by meeting current demands and anticipating future areas of need. Expertise developed by the advanced service complex was utilized for the benefit of another level of growing middle-market firm headquarters, the *Fortune* Second 500. This expertise enabled these headquarters to develop and remain competitive over time.

Approximately 75 percent of total expenditures for advanced services made by *Fortune* First and Second 500 firms headquartered in Cleveland came from the region (Knight 1977; 1978). Many of these headquarter operations have established long-term ties with specific advanced service firms. The resulting network of specialized knowledge has evolved to make Cleveland a center for the governance of technology.

The maintenance of this network provides a catalyst for increased involvement by manufacturing headquarter operations in community affairs. That is, since the network is locally based, Cleveland's continued vitality becomes an area of concern. Headquarters participation in social and political matters strengthens their committment to Cleveland. Wealth is generated that is noneconomic in nature, but which contributes to the headquarters path with its contingent of middle-market firms.

## Implications and Lessons Learned

Cleveland's overall strength as a manufacturing headquarters center has been identified in this research. A strong large-scale manufacturing firm headquarters presence remains despite recent erosion. Cleveland possesses a formidable concentration of middle-market, or Second 500 headquarters. These firms contribute to Cleveland's reputation as a center for the governance of technology and are a source for wealth and job creation.

The development of Cleveland as a manufacturing headquarters center has resulted primarily from its historical strength in manufacturing. During the industrial revolution firms located in the Great Lakes area because of easy access to raw materials, the presence of a growing market and low cost water transportation, later supplemented by rail. These advantages helped Cleveland develop its manufacturing capacity.

In the beginning, manufacturing headquarters were appendages to the plant, which often located in a city neighborhood. In time, with increased administrative requirements corresponding to the rise of a national and global economy, these headquarters expanded in size and functions performed, even to the point of locating in separate office facilities. Several manufacturing headquarters based in Cleveland directed the operations of firms which grew substantially in sales over the years, to the point where they entered the *Fortune* First and Second 500 Directories of largest manufacturing firms in the nation.

During the past 20 years, much of Cleveland's traditional routinized manufacturing strength has decentralized to low cost areas. Yet its manufacturing headquarters base has remained, related in part to a rich cultural base and the cultivation of human resources to accomplish headquarter-related tasks. Perhaps most significant to its continued presence, however, is the local advanced service complex. Deriving from the growth and development of large-scale firms headquartered in the area, this complex provides a source of expertise and advice not available in-house that enables Second 500 firms to remain competitive.

Several policy implications for economic development researchers arise from these research findings. Most important, there is a need to recognize the manufacturing headquarters path as a source for wealth and job creation in the Cleveland SMSA. Likewise, other geographic areas may have a similar strength in this or some other path, such as precision operations or research and development. These strengths, which cross industry lines, should be identified.

The headquarters path can be classified to enhance policy decision making alternatives. Cleveland, for example, remains a strong large-scale manufacturing headquarters center. However, the importance of Second 500, or middle-market firms, headquartered in Cleveland is clear. Moreover, there exists a third tier of firms poised to enter middle-market status that also should be identified. Many of these firms represent Cleveland's future strength. Other geographic areas may also possess strength in smaller headquarters which represent a future development opportunity.

Findings indicate that headquarter operations need to be retained and nurtured. Conservation is more important than spending limited resources in attracting new headquarters from other places. Based on its rich manufacturing heritage, Cleveland performs well in growing its own headquarter operations. Other industrial centers may share in this same fortune.

A primary source of nurturing is the development of an advance service capacity in the area that provides expertise to enable firms headquartered in Cleveland to remain competitive. In Cleveland's case, this expertise has evolved through the development of large-scale *Fortune* firms. The key lesson here is the realization that headquarter operations and related advanced services need each other to develop. A headquarters strategy in essence includes a complex network of headquarters and related advance services.

Practitioners should encourage and take steps to develop additional advance services that can meet the specialized needs of headquarters. Such a strategy could involve the use of public/private loan guarantee programs for firm start-ups. Existing venture capital programs for technology advances in manufacturing could be extended to include "governance of technology" enterprises.

Practitioners can play a role in upgrading skills of existing advanced service firms by acting as a mediator for these firms, various educational institutions and professional associations. These organizations are critical in the ability of advanced service firms to remain current with the state of the art. Programs focusing on specific aspects of the governance of technology could be formed in conjunction with major educational institutions and funded by business firms headquartered in the region.

The presence of an advanced service complex, of course, is not the only determinant of middle-market or large scale firm presence in Cleveland or any other city. Personal inclinations of decision makers, quality of life factors, shifting markets, and mergers and acquisitions all play a role in headquarter location. However, this advanced service complex is essential for a firm's success in a competitive national and global economy because of the specialized expertise it provides. A focus on advanced services is an important step in maintaining and enhancing Cleveland's position as a manufacturing headquarters center. In particular, it has enabled middle-market firms to develop in an often turbulent environment.

The headquarters path originated in Cleveland primarily through its strong manufacturing legacy. It can become a focal point for economic development of the Cleveland area through conscious design. This path, including the presence of middle-market firms and its advanced service complex, is an area in which practitioners can build a base to secure Cleveland's economic future. Other cities may hold a similar strength.

## Author's Note

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## Notes

1. Recent examples include Harris Corporation, AM International, Diamond Shamrock, and Figgie International, which have moved to new locations. Midland Ross and White Consolidated have been acquired by out-of-town firms.

2. This definition of the headquarters function was derived from the following authors and their works:
Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton, New Jersey:Princeton University Press, 1962); Peter Drucker, *The Age of Discontinuity, Guidelines to Our Changing Society* (New York:Harper and Row Publishers, 1969); Jean Gottman, "Urban Centrality and the Interweaving of Quartenary Activities", *Ekistics* 29 (May, 1970):322-331;John McHale, "The Changing Information Environment — A Selective Topography", in *Information Technology, Some Critical Implications for Decision Makers* (The Conference Board:November, 1971); Daniel Bell, *The Coming of Post-Industrial Society - A Venture in Social Forecasting* (New York:Basic Books, 1975); U.S. Department of Commerce, Office of Telecommunications, *The Information Economy: Definition and Measurement*, by Mark Uri Porat, OT Special Publication 77-12 (1) (Washington, D.C.: U.S. Government Printing Office, May 1977);Richard V. Knight, "City Development in Advanced Industrial Societies", Gary Gappert and Richard Knight, eds. *Cities in the 21st Century* Beverly Hills, 1982):-47-68;Jean Gottman, *The Coming of the Transactional City* (College Park, Maryland:University of Maryland, Institute for Urban Studies, 1983); Richard V. Knight, "Knowledge and the Advance Industrial Metropolis", Gary Gappert, ed. *The Future of Winter Cities* (Beverly Hills, 1987) 196-208.

3. These firms were Standard Oil (now BP America), TRW, Eaton, White Consolidated, Sherwin-Williams, Parker Hannifin, Midland Ross, Lubrizol, Figgie International, Republic Steel, Reliance Electric, Diamond Shamrock, White Motor, Addressograph-Multigraph, Harris Corporation, Hanna Mining, and Pneumo-Dynamics.

4. Departures from the area include Diamond Shamrock (Dallas), Harris Corporation (Melbourne, Florida), White Motors (Farmington, Michigan), Addressograph-Multigraph, now AM International (Los Angeles and now Chicago), and Figgie International (Richmond, Virginia).

5. These firms include Midland Ross (acquired by Forstmann, Little & Co.), Scott & Fetzer (Berkshire Hathaway, Inc.), Republic Steel (LTV Corporation), White Consolidated (Electrolux), and Reliance Electric (acquired by Exxon).

6. Examples include Scott & Fetzer, Republic Steel, and Reliance Electric.

7. The prime example is Midland Ross.

8. Reliance Electric was purchased by Exxon but recently was involved in a leveraged buy-out by private investors. Headquarters now are in Cleveland.

9. This firm was Pneumo-Dynamics, which was on the *Fortune* First 500 Directory for only one year, 1970.

10. These firms were American Greetings, Scott & Fetzer, Ferro Corp., North American Coal (now NACCO Industries), Warner & Swasey, Acme-Cleveland, Cleveland Cliffs Iron, Standard Products, Bobbie Brooks, Lamson and Sessions, Oglebay Norton, Work Wear Corp., Medusa, American Shipbuilding, Weatherhead, Cole National, and Van Dorn Co.

11. Second 500 firms in 1981 included North American Coal, Hanna Mining, Acme-Cleveland, Cleveland Cliffs Iron, Standard Products, Bobbie Brooks, Park-Ohio Industries, Lamson and Sessions, Oglebay Norton, Work Wear Corp., Brush-Wellman, Russell, Burdsall & Ward (RB&W), and Van Dorn Co.

12. Firms moving from *Fortune* Second to First 500 status between 1970 and 1981 were American Greetings, Ferro, and Scott & Fetzer.

13. This firm is Hanna Mining Co.

14. Firms appearing for the first time on the *Fortune* Second 500 list include Park Ohio Industries, Brush Wellman, Russell, Burdsall & Ward, and Mor-Flo.

15. The Second 500 firm that departed the area was American Shipbuilding, which moved to Tampa.

16. Those Second 500 firms involved in mergers or acquisitions with out of town firms were Medusa (Crane Co.), Technicare (Johnson & Johnson), Weatherhead (Dana Corp.), Motch Merryweather (Oerlikon-Buehrle), and Warner & Swasey (Bendix Corp.).

17. Several sources were used for recent middle-market firm headquarter data. They include company annual reports, "Greater Cleveland's Top Public Companies," *Crain's Cleveland Business*, 1986 and 1987; *Moody's Industrial Manual*, 1985; and *Standard & Poor's*, 1986.

18. Identification of Cleveland firms that would qualify for *Fortune* Second 500 status is calculated by adjusting the lower end of 1981 *Fortune* Second 500 sales ($122.5 million) to 1982 dollars, utilizing the Producer Price Index, Total Manufactures for 1985, found in U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, March 1986, Vol. 66 No. 3, "Current Business Statistics", S-6. The index stands at 97.71 (1982 = 100). The adjusted sales figure, therefore, is $125.3 million. In addition, sales figures for firms in the 1986 *Crain's Cleveland Business* firm directory are adjusted to 1982 dollars. All those that fall at or near the $125.3 million level are included as current Second 500, middle-market, manufacturing firm candidates.

19. This includes two firms, Sudbury Holdings and Mr. Gasket, that have grown rapidly, but fall just short of the qualifying figure of $125.3 million. The 18 firms and their 1985 sales (in millions) are as follows: Standard Products ($377.1), Cleveland Cliffs ($343.8), Van Dorn ($314.3), Ohio Mattress ($267.3), Brush Wellman ($242.9), Work Wear ($240.9), Acme-Cleveland ($223.5), M.A. Hanna ($221.6), Mor-Flo ($205.8), R.P.M. Inc. ($203.2), Park Ohio ($186.2), Oglebay Norton ($152.5), Russell, Burdsall & Ward ($154.2), Hauserman Inc. ($144.2), Lamson & Sessions ($132.3), Banner Industries ($127.9), Sudbury Holdings ($118.1), Mr. Gasket ($118.2).

20. 1985 assets are adjusted to 1982 dollars, and are derived from the Implicit Price Deflator, Fixed Investment, Nonresidential, in U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, March 1986, Vol. 66 No. 3, P. 106, Table 74.

21. Hanna Mining and Banner Industries have been involved in recent major acquisitions, leading to substantial increases in sales, the basis for *Fortune* First 500 ranking.

22. Bobbie Brooks departed the *Fortune* Second 500 list following a Chapter 10 reorganization.

## Appendix A

*Approach to the Research*

The approach to the research involves several steps that deal with *Fortune* First 500 firms, middle-market or *Fortune* Second 500 firms, and the network of advanced services. Large-scale (First 500) firms headquartered in the Cleveland area are examined between 1970 and 1986. Changes in the area's strength in this activity are measured by the number of firms and total sales, assets, and worldwide employment of these firms over time.

The number of firms gauges Cleveland's reputation as a manufacturing headquarters center, particularly when compared to other areas. Total sales measures the ability of area firms to provide something of value to customers. Total assets controlled and worldwide employment directed indicates the concentration of collective headquarters decision making power in Cleveland relative to other areas.

Following a review of large-scale firms, the strength of middle market (*Fortune* Second 500) firms headquartered in the Cleveland SMSA is examined. Absolute firm numbers are identified between 1970 and 1981, the final year the *Fortune* Directory of Second 500 manufacturing firms was available. Reasons for absolute changes in number are identifed, such as new entrants to *Fortune* Second 500 status, departures due to move-outs, mergers, and acquisitions, and Second 500 firms which achieved First 500 status.

Cleveland's absolute figures are placed in perspective by an examination of *Fortune* Second 500 strength within major metropolitan areas for 1981. Interest is focused on how Cleveland fares relative to middle-market manufacturing headquarters strength in other areas. In addition, the concentration of headquarters power is measured in Cleveland and other areas relative to population size. Power is defined by three attributes: sales, assets and worldwide employment. A location quotient is devised to measure regional headquarters power concentration.

Finally, Cleveland's most recent middle-market manufacturing firm headquarters strength is examined.

Included are firms that would qualify for *Fortune* Second 500 status based on adjusted 1981 sales. Emphasis is placed on absolute numbers, strength in sales, assets, and worldwide employment relative to earlier years, and those Second 500 firms which recently have achieved First 500 status.

Following a focus on manufacturing headquarters comes an examination of the advanced service complex. Focus is placed on two measures: changes in employment and payroll per employee over time (1970 and 1985). The former gauges advanced service strength and the latter takes into account changing skill levels.

The paper concludes with policy implications for economic development practitioners in the Cleveland area. These can also be applied to other mature industrial centers with a strong manufacturing headquarters base. Emphasis is placed on the importance of the headquarters path, the presence of middle-market firms, and the critical role of advanced service firms to their growth and development.

## Bibliography

Bell, D. 1975. *The Coming of Post-Industrial Society. A Venture in Social Forecasting*. New York: Basic Books.

Corey, Kenneth E. MC1987. "The Status of Transactional Metropolitan Paradigm". Pg. 145-162 in Gary Gappert (ed), *The Future of Winter Cities*. Beverly Hills: Sage Publications.

*Crain's Cleveland Business*. "Greater Cleveland's Top Public Companies," May 26, 1986.

"The Fortune 500. The Largest U.S. Industrial Corporations", *Fortune* (various issues, 1971-1987).

"The Fortune Second 500 Largest Industrial Corporations", *Fortune* (various issues, 1971-1982).

Drucker, P. 1969. *The Age of Discontinuity. Guidelines to Our Changing Society*. New York: Harper and Row, Publishers.

Gottman, J. 1983. *The Coming of the Transactional City*. College Park, Maryland: University of Maryland. Institute for Urban Studies.

Gottman, Jean. 1979. Office Work and the Evolution of Cities. *Ekistics*, 46-274. (January February): 4-7.

Gottman, Jean. 1970. Urban Centrality and the Interweaving of Quarternary Activities. *Ekistics*, 29 (May): 322-331.

Knight, R.V. 1978. "Changing Industrial Metropolis Requires New Vision" *Mid-American Outlook* (Summer): 8-10.

Knight, R.V. 1982. "City Development in Advanced Industrial Societies." Pp. 47-68 in G. Gappert and R.V. Knight (eds), *Cities in the 21st Century*. Beverly Hills: Sage Publications.

Knight, R.V. 1977. "The Cleveland Economy in Transaction Implications for the Future." Report to Study Participants. Regional Development Program, College of Urban Affairs, Cleveland State University, (July).

Knight, R.V. and Gappert, G. 1984. "Cities and the Challenge of the Global Economy." Pp. 63-78 in R.D. Bingham and J.P. Blair (eds), *Urban Economic Development*. Beverly Hills: Sage Publications.

Knight, Richard V. 1987. "Knowledge and the Advanced Industrial Metropolis." Pp. 196-208 in Gary Gappert (ed), *The Future of Winter Cities*. Beverly Hills: Sage Publications.

McHale, J. 1971. "The Changing Information Environment. A Selective Topography." In *Information Technology. Some Critical Implications for Decision Makers*. The Conference Board (November).

Machlup, F. 1982. *The Production and Distribution of Knowledge in the United States*. Princeton, New Jersey: Princeton University Press.

*Moody's Industrial Manual*. Moody's Investors Service. New York, 1986 (2 vols.).

Noyelle, T.J. and Stanback, T.M. 1983. *The Economic Transformation of American Cities*. Totowa, New Jersey: Allanheld, Osmun.

Noyelle, T.J. 1985. "The Rise of Advanced Services. Some Implications for Economic Development in U.S. Cities." *Journal of the American Planning Association* 49: 280-290.

Pred, Allan. *City Systems in Advanced Economies. Past Growth, Present Processes and Future Development Options*. New York: John Wiley and Sons, 1977.

Pred, Allan R. 1974. *Major Job Providing Organizations and Systems of Cities*. Commission on College Geography. Resource Paper No. 27. Washington, D.C.: Association of American Geographers.

Stanback, T.M., Jr. 1985. "The Changing Fortunes of Metropolitan Economies," Pp. 122-142 in Manuel Castells (ed), *High Technology, Space, and Society*. Beverly Hills: Sage Publications.

Stanback, T.M., Jr., P.J. Bearse, T.J. Noyelle, R.A. Karasek, 1981. *Services: The New Economy*. Totowa, New Jersey: Allanheld, Osmun.

*Standard & Poor's Register of Corporations, Directors, and Executives*. Standard & Poor's Corporation. New York, 1986 (3 vols.).

Thompson, W.R. "Cities in Transition." 1987. *Annals of the Academy of Political and Social Sciences.* 488: 1834.

Thompson, W.R. and Thompson, P.R. 1985. "From Industries to Occupations. Rethinking Local Economic Development." *Economic Development Commentary* 9, 3 (Fall): 12-18.

U.S. Bureau of the Census. *County and City Data Book, 1983.* U.S. Government Priority Office: 1983.

U.S. Bureau of the Census. *Statistical Abstract of the United States: 1981* (102nd Edition) Washington, D.C., 1981.

U.S. Department of Commerce, Bureau of Economic Analysis. *Survey of Current Business.* March 1986, Vol. 66, No. 3. Washington, D.C.: U.S. Government Printing Office, 1986.

U.S. Department of Commerce, Office of Telecommunications. *The Information Economy: Definition and Measurement.* By Marc Uri Porat, OT Special Publication 7712 (1). Washington, D.C.: U.S. Government Printing Office, May 1977.

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BUREAU OF BUSINESS RESEARCH, SCHOOL OF BUSINESS ADMINISTRATION
THE COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VIRGINIA

Report No. 334 July, 1988

## Business in Virginia June , 1988

Virginia seems to be travelling a hilly road. In April the growth rates for most of our indicators went downhill. Then in May they climbed again, for the most part reaching respectable heights. Now, the June results show the growth rates slid into another valley. Of the seven indicators for which we have June data, four fell below last year's levels; and the growth rates for the other three were under 4 percent.

The growth rates will climb again in the coming months since the underlying fundamentals, jobs and income, are continuing to grow strongly and steadily. The erratic monthly results, though, are signs the post-1982 economic expansion is beginning to show its age. We still expect 1988 to be a great year for Virginia, as predicted in the June issue; but the evidence is mounting in support of our forecast of slower growth in 1989.

In June, new car registrations fell 8.4 percent statewide compared to the same month last year. Bank debits dropped by 8.4 percent, signalling less total spending than a year ago.

The other two negatives for June were electricity consumed and our retail sales sample, both down 1.4 percent. For retail sales, that is the fifth consecutive month in which sales per store by our sample has decreased compared to the same months last year, and the cumulative January-June result is a drop of 1.4 percent. As we discussed last month, competition among retailers, particularly the general merchandise types that dominate our sample, has been fierce this year as new facilities seem to have outstripped the meager growth in consumer demand.

On the plus side, building permits edged up 1.3 percent statewide. In reality that is a very weak performance since in June 1987 building permits fell 35 percent - a 1.3 percent recovery leaves us over 34 percent below the June 1986 levels. The cumulative January-June increase is 11.0 percent, still double-digit but falling. [While discussing building permits, it is appropriate to correct an error in last month's tables. Roanoke building permits declined 7.8 percent in May, yielding a cumulative January-May gain of 44.4 percent. The corrected state values for building permits are: May, +26.8 percent; and cumulative, +14.3 percent.]

The nonagricultural employment figures for May showed a 3.9 percent increase, still very strong growth. The taxable sales results for May (last column in Table II) are less encouraging. This May's sales statewide were only 2.0 percent higher than a year ago and were down in many localities. The Virginia gain is well below the nationwide May increase of 4.7 percent for retail trade excluding autos (measured May to May). Virginia's households are experiencing stronger income growth than the nation, as described in our second article. As noted before, the slow growth recently in Virginia's retail sales indicates a reluctance, not an inability, to buy.

RLP

Chart I

Nine Selected Business & Economic Indicators Percentage Change

Percentage Change June, 1988 from June, 1987

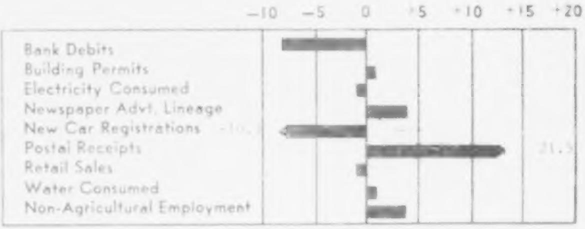
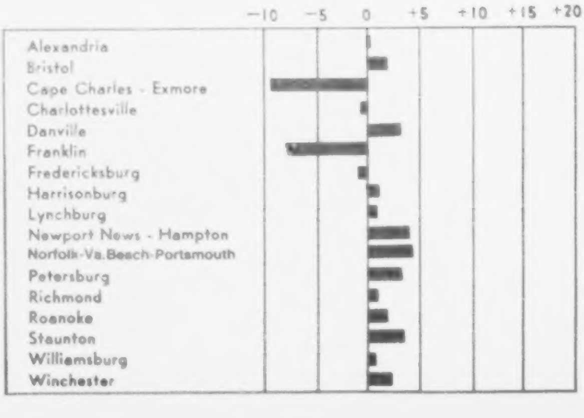


Chart II

City Indices

Percentage Change June, 1988 from June, 1987



## SELECTED BUSINESS AND ECONOMIC INDICATORS FOR 17 CITIES

**TABLE I** June, 1988

Monthly Index Number Comparisons of Current Month to Same Month in Base Period (1977) - Base Period = 100

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | May NON AGRI-CULTURAL EMPLOYMENT# | WATER CONSUMED | RETAIL SALES† | POSTAL RECEIPTS |
|---|---|---|---|---|---|---|---|---|---|---|
| The State |  | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 161.7 | 409.4 |
| Alexandria | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 149.9 | N.A. |
| Bristol | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 127.2 | 336.6 |
| Cape Charles - Exmore | [illegible] | N.A. | [illegible] | [illegible] | N.A. | [illegible] | N.A. | N.A. | [illegible] | 267.1 |
| Charlottesville | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 205.7 | 332.6 |
| Danville | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | 265.6 |
| Franklin | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | 308.8 |
| Fredericksburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | [illegible] | 236.9 | N.A. |
| Harrisonburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | N.A. | 174.4 | 327.8 |
| Lynchburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | 118.9 | 187.0 | 1049.7 |
| Newport News - Hampton | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 171.5 | N.A. |
| Norfolk - Portsmouth | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] |  | 88.1 | 208.3 | N.A. |
| Petersburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 111.5 | 128.8 | 246.9 |
| Richmond | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] | 160.0 | 378.6 |
| Roanoke | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 127.2 | 417.1 |
| Staunton | [illegible] | [illegible] | [illegible] | N.A. | N.A. | [illegible] | N.A. | N.A. | 216.9 | 234.0 |
| Williamsburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | [illegible] | 392.0 |
| Winchester | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | N.A. | N.A. | N.A. |

**TABLE II** June, 1988

Percentage Change from same month last year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | May NON AGRI-CULTURAL EMPLOYMENT# | WATER CONSUMED | RETAIL SALES † | May RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| The State |  | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -1.4 | 2.0 |
| Alexandria | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | -5.9 | 3.0 |
| Bristol | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2.9 |
| Cape Charles - Exmore | [illegible] | N.A. | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | -3.3 | -15.3 |
| Charlottesville | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | -1.0 | -2.8 |
| Danville | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | 22.1 |
| Franklin | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | -48.8 |
| Fredericksburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | 16.1 | -8.9 | [illegible] |
| Harrisonburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | N.A. | [illegible] | 12.6 |
| Lynchburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | [illegible] | -1.8 |
| Newport News - Hampton | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -1.1 | -8.8 |
| Norfolk - Va. Beach - Portsmouth | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] |  | [illegible] | [illegible] | -2.8 |
| Petersburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | 0.9 | -3.0 |
| Richmond | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] | [illegible] | 5.3 |
| Roanoke | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 8.5 |
| Staunton | [illegible] | [illegible] | [illegible] | N.A. | N.A. | [illegible] | N.A. | N.A. | 10.8 | -7.9 |
| Williamsburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | [illegible] | -1.3 |
| Winchester | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | N.A. | N.A. | 9.5 |

**TABLE III**

Percentage Change [illegible] from same period last year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | Jan.-May NON AGRI-CULTURAL EMPLOYMENT# | WATER CONSUMED | RETAIL SALES † | Jan.-May RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| The State |  | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -1.4 | 4.6 |
| Alexandria | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | -7.7 | 0.7 |
| Bristol | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -6.0 | -0.1 |
| Cape Charles - Exmore | [illegible] | N.A. | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | -12.5 | -6.7 |
| Charlottesville | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 6.5 | 10.0 |
| Danville | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -9.2 | N.A. | 17.8 |
| Franklin | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | -1.1 | -21.6 |
| Fredericksburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | 21.0 | 0.0 | 0.2 |
| Harrisonburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | N.A. | 2.1 | 12.6 |
| Lynchburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | -0.1 |
| Newport News - Hampton | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | -7.8 | -1.2 | -4.0 |
| Norfolk - Va. Beach - Portsmouth | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] |  | [illegible] | 0.6 | -0.8 |
| Petersburg | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 9.8 | 0.9 | 0.0 |
| Richmond | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |  | [illegible] | -2.6 | 5.2 |
| Roanoke | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 0.0 | [illegible] | [illegible] | 11.9 |
| Staunton | [illegible] | [illegible] | [illegible] | N.A. | N.A. | [illegible] | N.A. | N.A. | 12.7 | -2.4 |
| Williamsburg | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | N.A. | [illegible] | 1.3 | 0.2 |
| Winchester | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | N.A. | N.A. | N.A. | 11.4 |

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*Computation of City Index is based upon a weighted arithmetic mean of all business and economic components listed except Building Permits and Bank Debits, which are excluded because of their highly erratic nature.

#Virginia Employment Commission data which lags behind current reports.

†Preliminary data based on a survey sample.

‡Revised data based on sales tax information which lags behind current reports.

]Only total MSA data are available for these areas

N.A. — Not Available
O.O. — No Change

## Virginia Income and Earnings, First Quarter 1988

If you evaluate Virginia as a business, how well are we doing? And, how do we compare to our competition, the other forty-nine states? The Commerce Department's Bureau of Economic Analysis released July 20 their estimates of state personal income for the first quarter of 1988. These estimates in effect are the quarterly income and earnings statements for our fifty states.

First, a national perspective. In the first quarter compared to the fourth quarter of last year, personal income growth slowed in forty-seven states. Only Montana, Idaho, and Oklahoma experienced stronger growth during the first quarter than the fourth. The fourth quarter U.S. growth rate measured as a seasonally adjusted annual rate (SAAR) was 11.8 percent. That fell to 3.0 percent, SAAR, in the first quarter. Some general factors influenced individual states, such as lower farm subsidy payments in some states and large auto industry bonuses concentrated in Michigan and Ohio. The general slowdown, though, was not the result of special factors.

Virginia's personal income growth also decelerated in the first quarter, but not nearly as much as the national average. The Commonwealth's fourth quarter growth rate was 9.1 percent , SAAR, slipping modestly to 6.9 percent, SAAR, in the first quarter. That 6.9 percent rate is over twice the nation's 3.0 percent pace.

That 6.9 percent rate also gives Virginia the eighth highest income growth rate among all states for the first quarter of 1988. From a business perspective, Virginia clearly retains its status as a "Blue-Chip" growth state.

So far, our growth has been measured between adjacent quarters, the fourth and the first. Such a measure reveals the current pulse of the economy, showing whether or not we have altered our pace in recent months. Another useful indicator is the growth rate year-over-year, or from the same quarter in the preceding year. Such a rate shows the cumulative gain over the past four quarters, how much better off we are now than a year ago.

Nationwide, the first quarter to first quarter advance for personal income was 6.3 percent. In Virginia, the gain was 7.9 percent, well above the average. This 7.9 percent growth was the eighth highest year-over-year rise among the states. Therefore, Virginia's first quarter 1988 income growth ranked in eighth place nationally measured both fourth-to-first quarter (6.9 percent) and first-to-first (7.9 percent). That identical ranking illustrates our first quarter 1988 performance is not merely an isolated event but the culmination of four quarters of superior growth. Consistency and balance have been two prominent attributes of Virginia's growth in the 1980s, so much so that we sometimes take them for granted. However, those attributes are not so common across the nation. For example, no other state ranked in the top ten by one of the growth measures also placed in the top ten by the other measure.

Virginia's 7.9 percent income growth from the first quarter of 1987 to first quarter 1988 is consistent with our 1988 forecasts in the June issue. For the year, we predicted resident personal income will rise by 8.3 percent, up from a 7.6 percent increase in 1987. The actual first quarter rate of 7.9 percent confirms that Virginia's income growth (before adjusting for inflation) is slightly higher than last year and most likely will exceed eight percent for the entire year.

With high income growth goes new heights in the level of income. At a seasonally adjusted annual rate, Virginia's total personal income received by residents reached $101.2 billion in the first quarter, putting us over $100 billion for the first time. That bolsters our prediction that the average for the year will be $104.4 billion.

So far, we have only reported on the personal income received by Virginia residents. That is a very broad measure, including all receipts whether or not they were earned by work during the current quarter. Another important indicator is earnings by place of work, what is earned by payroll workers and sole proprietors for their labor in Virginia.

Table IV shows not only the level and growth rates for resident personal income but also for total earnings, place of work, and earnings by industry. The middle two columns give adjacent-quarter growth rates converted to annual rates (SAAR) for third-to-fourth quarter and fourth-to-first. A comparison of those two columns reveals whether or not earnings growth slowed down in the first quarter compared to the pace in the fourth. Then, the last column reports the year-over-year change, how far the first quarter of 1988 is above the first quarter of 1987.

Looking to the middle two columns, overall earnings growth in the first quarter at 8.6 percent, SAAR, was slightly better than the 8.4 percent pace in the fourth quarter. The first quarter, though, was dampened by a 28.8 percent drop (SAAR) in farm earnings. Nonfarm earnings increased by 8.9 percent in the first quarter, clearly better than the 8.2 percent for the fourth quarter.

During the first quarter, there was substantial acceleration to double-digit growth in five sections: agricultural services, forestry and fisheries (soaring to a 39.8 percent annual rate of growth); wholesale trade (to 13.6 percent) and retail trade (to 14.6 percent); military earnings (to 18.5 percent); and state and local government (to 11.4 percent). Thus, compared to the fourth quarter, we experienced a first quarter surge in government, trade, and natural resource-based industries.

Taking the longer one-year view, comparing the first quarter of 1988 to the first quarter of 1987, gives a somewhat different picture. Earnings in wholesale and retail trade have been strong, but they have not grown year-over-year at a double-digit pace. Instead, we find services achieved a 11.6 percent increase, 1987:1 – 1988:1. Mining also stood more than 10 percent above last year, up 11.7 percent 1987:1 – 1988:1, even though the first quarter level was the same as the fourth quarter. Similarly, construction earnings were 11.3 percent above a year ago even though growth slowed from the fourth to the first quarter.

In sum, the star industries over the four-quarter period have been food and timber-based industries (+12.7 percent), mining (+11.7 percent), services (+11.6 percent), construction (+11.3 percent), state and local government (+10.4 percent), plus farm earnings (+10.2 percent). More important, however, the last column of Table IV shows all of Virginia's industry sectors, public and private, achieved first quarter 1987 to first quarter 1988 growth exceeding 4 percent. Therefore, real (inflation-adjusted) gains occurred in all sectors, reaffirming the breadth and balance of Virginia's growth.

**RLP**

TABLE IV

## VIRGINIA PERSONAL INCOME AND EARNINGS, AT SEASONALLY ADJUSTED ANNUAL RATES

| | Bill. $, 1988:Q1 | % Change, 1987:Q3-1987:Q4 | % Change, 1987:Q4-1988:Q1 | % Change, 1987:Q1-1988:Q1 |
|---|---|---|---|---|
| TOTAL PERSONAL INCOME | $101.2 | 9.1% | 6.9% | 7.9% |
| EARNINGS, PLACE OF WORK | $73.6 | 8.4% | 8.6% | 8.3% |
| EARNINGS BY INDUSTRY: | | | | |
| FARM | $0.5 | 36.1% | -28.8% | 10.2% |
| NONFARM | 73.1 | 8.2% | 8.9% | 8.3% |
| PRIVATE | 54.9 | 8.3% | 8.0% | 8.7% |
| AGRI. SERV., FOR., FISHERIES | 0.3 | 18.7% | 39.8% | 12.7% |
| MINING | 0.9 | 24.8% | 0.0% | 11.7% |
| CONSTRUCTION | 5.8 | 16.3% | 8.1% | 11.3% |
| MANUFACTURING | 11.3 | 4.6% | 4.0% | 4.9% |
| NONDURABLE GOODS | 5.6 | 0.6% | -0.9% | 5.3% |
| DURABLE GOODS | 5.7 | 8.7% | 9.2% | 4.4% |
| TRANS. & PUBLIC UTILITIES | 5.1 | 6.5% | 6.8% | 6.9% |
| WHOLESALE | 3.8 | 6.6% | 13.6% | 7.7% |
| RETAIL | 7.0 | -0.9% | 14.6% | 8.7% |
| FINANCE, INS., REAL ESTATE | 4.0 | 1.4% | 6.2% | 6.3% |
| SERVICES | 16.6 | 14.2% | 7.5% | 11.6% |
| GOVERNMENT | 18.2 | 8.0% | 11.7% | 7.3% |
| FEDERAL CIVILIAN | 5.6 | 11.5% | 6.7% | 5.9% |
| MILITARY | 4.8 | 3.2% | 18.5% | 4.4% |
| STATE & LOCAL | 7.7 | 8.5% | 11.4% | 10.4% |

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Roy L. Pearson Director, Bureau of Business Research
John C. Jamison, Dean, School of Business Administration

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# VIRGINIA BUSINESS REPORT

BUREAU OF BUSINESS RESEARCH, SCHOOL OF BUSINESS ADMINISTRATION
THE COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VIRGINIA

Report No. 335 August, 1988

## Business in Virginia July, 1988

July 1987 was an exceptional month in Virginia, with statewide gains for all nine of our economic indicators as reported in last August's issue plus increases for the lagged series published in the September issue. July was the only month during 1987 that all of the indicators rose, compared to the same month in the preceding year. Not all of the state's urban areas had only pluses that month, but 15 of the 17 areas we track did experience advances in their City Indexes.

Well, that was last year. This July we could not match last year's levels for most indicators - six of our nine indicators fell short. We will look at the three exceptions first and then analyze the declining series.

The three gainers this year were non-agricultural employment (lagged), electricity consumed, and building permits. Payroll jobs were up 3.9 percent this June versus June of 1987 (and will be up almost as much in July), reflecting the continued expansion of capacity in Virginia's businesses by old and new firms. The July growth for electricity consumed of 3.4 percent indicates more utilization of our facilities, both commercial and residential.

The third indicator that rose, however, more clearly reflects the optimism of Virginia businesses. Building permits statewide jumped 13.2 percent in July, bringing the cumulative January-July advance to 11.4 percent. That strong level of planned construction may be scaled back in the coming months in the face of rising interest rates and lower demand for new housing, as reflected already in the 5.3 percent decline in single family home sales in Virginia during July reported by the Virginia Association of Realtors.

In sum, the positive movements of these three indicators are welcome news but an insufficient basis for expecting Virginia's overall real growth in 1988 to match the 1987 rate.

Negatives dominate this month's statistics. As shown in Table II, six of our economic indicators fell on a statewide basis when compared to the same month last year. Most of the declines were moderate – 5 percent or less. The exception was July's bank debits (measuring spending from checking accounts), which dropped 15.8 percent. The volume of bank debits is highly volatile with large and erratic monthly swings, so any one month's data may not be representative. However, debits also were down in June and have experienced a cumulative 7.2 percent fall for January-July. Those results indicate total spending by customers of our sample of financial institutions is lower than last year.

Decreases in consumer demand were signaled by three of our indicators. New car registrations statewide fell 3.9 percent in July, following a 10.3 percent year-over-year drop in June. Automobile demand clearly is lower than last year and has been propped up only by substantial incentives and price breaks from the dealers.

Chart I

Nine Selected Business & Economic
Indicators Percentage Change

Percentage Change July, 1988 from July 1987

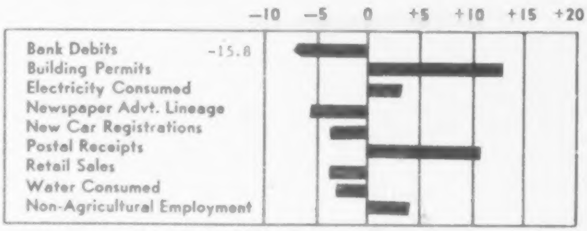
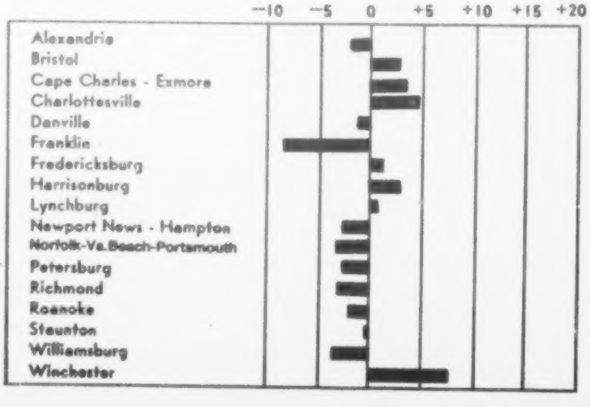


Chart II

City Indices

Percentage Change July, 1988 from July 1987



## SELECTED BUSINESS AND ECONOMIC INDICATORS FOR 17 CITIES

**TABLE I** July, 1988

Monthly Index Number Comparisons of Current Month to Same Month in Base Period (1977) Base Period = 100

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | June NON AGRI-CULTURAL EMPLOYMENT | WATER CONSUMED | RETAIL SALES † | POSTAL RECEIPTS |
|---|---|---|---|---|---|---|---|---|---|---|
| The State | | 177.2 | 140.7 | 170.3 | 99.8 | 197.2 | 147.6 | 109.7 | 172.7 | 418.6 |
| Alexandria | 133.1 | 196.0 | 692.4 | 112.1 | N.A. | 247.9 | 203.7 | 113.6 | 130.1 | N.A. |
| Bristol | 640.8 | N.A. | 95.7 | 99.9 | 60.9 | 145.7 | 120.3 | 238.2 | 123.2 | 350.1 |
| Cape Charles - Exmore | 114.9 | N.A. | 181.0 | 270.4 | N.A. | 120.0 | N.A. | N.A. | 129.9 | 271.6 |
| Charlottesville | 200.6 | 130.4 | 69.9 | 190.0 | N.A. | 158.0 | 121.9 | 146.8 | 248.3 | 327.9 |
| Danville | 133.8 | N.A. | 173.9 | 129.7 | 108.9 | 118.8 | 102.5 | 96.3 | N.A. | 263.5 |
| Franklin | 143.3 | N.A. | 178.0 | 190.3 | 95.2 | 277.0 | N.A. | 165.8 | 114.6 | 306.5 |
| Fredericksburg | 176.1 | 222.2 | 1001.3 | N.A. | 196.2 | 258.9 | N.A. | 100.4 | 214.5 | 1450.0 |
| Harrisonburg | 179.3 | 272.9 | 106.6 | N.A. | 150.9 | 165.2 | N.A. | N.A. | 159.4 | 320.1 |
| Lynchburg | 267.7 | 388.2 | 190.2 | 223.9 | N.A. | 119.5 | 101.9 | 132.7 | 192.9 | 920.0 |
| Newport News - Hampton | 141.4 | N.A. | 197.4 | 130.3 | 96.1] | 109.7 | 147.9] | 134.6 | 164.0 | N.A. |
| Norfolk - Va. Beach - Portsmouth | 171.5 | 442.6 | 379.1 | 109.4 | | 127.0 | | 100.0 | 230.4 | N.A. |
| Petersburg | 129.9 | 66.0 | 202.9 | N.A. | 28.6 | 87.8 | 119.0] | 119.7 | 138.4 | 252.5 |
| Richmond | 180.5 | 193.8 | 97.6 | 167.4 | 107.3 | 150.9 | | 143.3 | 138.7 | 375.4 |
| Roanoke | 188.4 | 165.0 | 491.6 | 102.0 | 152.1 | 89.2 | 172.7 | 128.0 | 167.9 | 385.1 |
| Staunton | 162.4 | 147.9 | 267.1 | N.A. | N.A. | 105.4 | N.A. | N.A. | 153.6 | 245.6 |
| Williamsburg | 180.3 | 187.3 | 27.4 | 211.8 | N.A. | 166.3 | N.A. | 233.0 | 133.7 | 386.6 |
| Winchester | 179.5 | 195.1 | 222.3 | 144.9 | 210.5 | 181.3 | N.A. | N.A. | N.A. | N.A. |

**TABLE II** July, 1988

Percentage Change from same month last year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | June NON AGRI-CULTURAL EMPLOYMENT‡ | WATER CONSUMED | RETAIL SALES † | June RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| The State | | -15.2 | 10.2 | 2.4 | -10.7 | -1.9 | 3.4 | -0.3 | -1.0 | -2.4 |
| Alexandria | -2.2 | 9.0 | 316.8 | 1.0 | N.A. | -4.0 | 5.6 | 0.2 | -7.7 | -7.0 |
| Bristol | 2.6 | N.A. | -59.7 | 1.1 | -22.9 | 24.3 | 6.0 | 13.5 | -3.4 | -9.3 |
| Cape Charles - Exmore | 26.8 | N.A. | -27.7 | 26.6 | N.A. | 7.9 | N.A. | -29.8 | 0.3 | -6.9 |
| Charlottesville | 5.5 | -29.5 | -32.3 | 5.2 | N.A. | 13.0 | 1.7 | -1.6 | 6.3 | 1.6 |
| Danville | -1.1 | N.A. | -40.8 | -0.8 | -14.8 | 6.8 | 2.2 | -6.3 | N.A. | 18.8 |
| Franklin | -8.8 | N.A. | 9.5 | -10.3 | -8.1 | 4.7 | N.A. | -9.9 | -21.9 | 4.5 |
| Fredericksburg | 1.0 | 18.2 | 119.8 | N.A. | 2.8 | 0.6 | N.A. | -4.7 | -1.1 | 13.1 |
| Harrisonburg | 1.8 | -7.6 | -13.2 | N.A. | 3.2 | 27.0 | N.A. | N.A. | -5.2 | 8.9 |
| Lynchburg | 0.8 | 12.5 | -20.9 | 1.3 | N.A. | -8.0 | 1.1 | 3.4 | 0.1 | 5.6 |
| Newport News - Hampton | -4.3 | N.A. | -38.3 | -2.2 | -2.3] | -11.1 | 1.9] | -9.3 | -2.3 | -4.4 |
| Norfolk - Va. Beach - Portsmouth | -2.6 | -17.3 | 39.3 | 3.8 | | -8.6 | | -6.6 | -1.8 | -5.7 |
| Petersburg | -2.6 | -44.5 | 148.6 | N.A. | -12.8 | -4.1 | 3.0] | -2.8 | -0.4 | -1.5 |
| Richmond | -2.7 | 19.3 | -80.1 | 2.6 | -4.6 | -11.4 | | 0.7 | -5.3 | 1.0 |
| Roanoke | -1.9 | -2.8 | 138.7 | 4.9 | -11.9 | -9.2 | -1.6 | 2.9 | 0.2 | -0.9 |
| Staunton | -0.2 | -11.4 | -47.3 | N.A. | N.A. | -7.9 | N.A. | N.A. | 6.5 | -12.7 |
| Williamsburg | -1.5 | -8.5 | -60.6 | 4.3 | N.A. | -15.9 | N.A. | 2.0 | -2.0 | -8.9 |
| Winchester | 7.6 | 2.2 | -57.0 | 2.1 | 5.8 | 11.7 | N.A. | N.A. | N.A. | 12.0 |

**TABLE III**

Percentage Change January - July from same period last year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWS-PAPER ADV LINAGE | NEW CAR REGIS-TRATIONS | Jan.-July NON AGRI-CULTURAL EMPLOYMENT‡ | WATER CONSUMED | RETAIL SALES † | Jan.-July RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| The State | | 17.1 | 11.6 | 4.6 | -0.7 | 2.7 | 4.3 | 0.2 | -1.6 | 3.4 |
| Alexandria | -0.6 | 10.8 | 70.4 | 6.5 | N.A. | 3.1 | 7.1 | 1.5 | -7.7 | -0.1 |
| Bristol | 0.4 | N.A. | -2.2 | 2.6 | -11.8 | 16.5 | 0.9 | 9.4 | -5.7 | -1.7 |
| Cape Charles - Exmore | -2.4 | N.A. | 76.3 | 10.6 | N.A. | 17.0 | N.A. | N.A. | -11.8 | -6.8 |
| Charlottesville | 5.7 | -36.1 | 18.8 | 3.8 | N.A. | 9.0 | 5.0 | 2.8 | 6.4 | 5.8 |
| Danville | 4.4 | N.A. | 53.4 | -1.9 | 1.5 | 15.7 | 2.0 | -8.8 | N.A. | 18.0 |
| Franklin | -5.4 | N.A. | 36.9 | -1.3 | 4.8 | -4.6 | N.A. | -8.7 | -5.0 | -18.6 |
| Fredericksburg | 3.2 | 4.5 | -45.9 | N.A. | -0.2 | 5.8 | N.A. | 15.5 | -0.2 | 2.2 |
| Harrisonburg | 5.5 | 4.7 | -9.4 | N.A. | 16.6 | 1.8 | N.A. | N.A. | 0.9 | 12.0 |
| Lynchburg | 1.7 | 2.2 | -20.9 | 7.2 | N.A. | 6.6 | 1.0 | 1.2 | 0.5 | 0.8 |
| Newport News - Hampton | -2.4 | N.A. | 6.8 | 1.2 | -2.3] | -8.0 | 3.5] | -8.1 | -1.3 | -4.1 |
| Norfolk - Va. Beach - Portsmouth | -0.3 | -11.0 | 5.2 | 4.2 | | -7.0 | | -0.1 | 0.3 | -1.7 |
| Petersburg | 2.3 | -36.5 | -4.8 | N.A. | -5.1 | 11.2 | 3.7] | 7.7 | 0.8 | -0.3 |
| Richmond | 2.0 | -8.0 | -32.7 | 4.2 | 1.7 | 0.9 | | 6.8 | -1.2 | 4.5 |
| Roanoke | 1.7 | 0.6 | 40.9 | 3.1 | -1.1 | -2.4 | -0.3 | 4.1 | 0.3 | 9.7 |
| Staunton | 8.2 | -1.3 | 10.6 | N.A. | N.A. | 9.8 | N.A. | N.A. | 11.8 | -4.2 |
| Williamsburg | 1.1 | 7.3 | 66.2 | 4.0 | N.A. | 1.3 | N.A. | 2.3 | 0.6 | -1.7 |
| Winchester | 7.3 | 8.7 | -77.4 | 1.9 | 3.7 | 12.0 | N.A. | N.A. | N.A. | 11.5 |

*Computation of City Index is based upon a weighted arithmetic mean of all business and economic components listed except Building Permits and Bank Debits, which are excluded because of their highly erratic nature.
#Virginia Employment Commission data which lags behind current reports.
†Preliminary data based on a survey sample.
‡Revised data based on sales tax information which lags behind current reports.
]Only total MSA data are available for these areas

Retail trade in general also is short of last summer's levels in Virginia. Retail sales subject to Virginia's 4.5 percent general sales tax retreated 2.4 percent in June (latest data available) after only a very modest 2.0 percent advance in May. If these figures were adjusted for inflation, both months would show a decrease in real terms.

The Bureau's sample of retail stores reported a 3.0 percent fall in sales per store for July, a larger drop than the 1.4 percent in June but less than May's 4.3 percent. Thus, our own sample and the state sales tax receipts both are delivering the same message: retail sales in Virginia this summer so far are below last year's levels. For the same period, comparable national figures show gains. Retail sales (excluding the automobile group) nationally rose 5.2 percent in June and 4.8 percent in July compared to the same months in 1987.

By region, the decreases are concentrated at the edges or "corners" of the Commonwealth: Northern Virginia, from Alexandria to the Rappahannock; Hampton Roads, from Williamsburg to Virginia Beach; the Eastern Shore; and the Bristol area. On the other hand, Fredericksburg, Charlottesville, Lynchburg, Danville, and the upper Shenandoah Valley are experiencing increases.

What has happened to Virginia's retail demand? We do not have enough information yet for an area-by-area analysis, but some general observations are possible. Last summer is a key to the answer. In June and July of 1987, taxable retail sales soared, up 13.0 and 11.8 percent, respectively. Virginians were on a buying spree, at home and in other parts of Virginia. Out-of-state visitors were spending freely too, with double-digit gains in tourist receipts being reported. Our retail trade hit exceptional levels that consumers, both Virginians and visitors, do not feel they can afford to repeat this summer. We will see gains in other months and for 1988 as a whole; but for June and July, last year's spending peaks remain unchallenged.

In sum, July 1987 exhibited some serendipity when many forces coincided to yield pluses in all indicators statewide and in most local areas. No such fortunate convergence occurred this July, so our current economic activity, especially in household demand, suffers by comparison. More generally, the June and July 1988 results are further strong evidence that the consumer boom of 1982-1987 in Virginia has ended, replaced by more moderate and sustainable rates of consumer demand growth. RLP

## The Fed Means Business

Monetary policy "refers to actions taken by central banks to affect monetary and other financial conditions in pursuit of the broader objectives of sustainable growth of real output, high employment, and price stability" (*The New Palgrave: A Dictionary of Economics*, 1987).

Your central bank is the U.S. Federal Reserve System, chaired by Alan Greenspan (who assumed the office one year ago on August 11, 1987). The Federal Reserve is doing its job, actively pursuing in both word and deed a monetary policy intended to prevent a resurgence of high inflation while enabling the U.S. economy to continue to experience real growth.

On August 9, the Federal Reserve increased its discount rate (the interest rate it charges banks for short-term loans) from 6.0 percent to 6.5 percent. That is a clear signal of the Fed's strong resolve to squelch inflationary pressure – a dramatic way of showing there is no moratorium on monetary policy, no shifting into a neutral stance until after the November elections.

The discount rate increase adds credence to Chairman Greenspan's mid-year testimony to Congress on July 13. It is worthwhile to quote from that testimony at some length, to show the perspective and intent of the Federal Reserve:

> *Considering the already limited slack in available labor and capital resources, a leveling of the unemployment and capacity utilization rates is essential if more intense inflationary pressures are to be avoided in the period ahead. Otherwise, aggregate demand would continue growing at an unsustainable pace and would soon begin to create a destabilizing inflationary climate. Supply conditions for materials and labor would tighten further and costs would start to rise more rapidly; businesses would attempt to recoup profit margins with further price hikes on final goods and services. These faster price rises would, in turn, foster an inflationary psychology, cut into workers' real purchasing power, and prompt an attempted further catchup of wages, setting in motion a dynamic process in which neither workers nor businesses would benefit. The hard-won gains in our international competitiveness would be eroded, with feedback effects depressing the exchange value of the dollar. Excessive domestic demands and inflation pressures in this country, with its sizable external deficit, would be disruptive to the ongoing international adjustment of trade and payments imbalances.*
>
> *The costs to our economy and society of allowing a more intense inflationary process to become entrenched are serious. As the experience in the past two decades has clearly shown, accelerating wages and prices would have to be countered later by quite restrictive policies, with unavoidable adverse implications for production and employment. The financial health of many individual and business debtors, as well as of some of their creditors, then would be threatened. The long-run costs of a return to higher inflation and the risks of this occurring under current circumstances are sufficiently great that Federal Reserve policy at this juncture might be well advised to err more on the side of restrictiveness rather than of stimulus.*
>
> *The FOMC [Federal Open Market Committee] believes that efforts to contain inflation pressures and sustain the economic expansion would be fostered by growth of the monetary aggregates over 1988 well within their reaffirmed 4 to 8 percent annual ranges, followed by some slowing in money growth over the course of next year.*
>
> *For 1989, the FOMC has underscored its intention*

> *to encourage progress toward price stability over time by lowering its tentative ranges for [the growth of] money and debt.*

The strong intent voiced in these statements was supported at the time by acknowledgment that the Fed had indeed begun in late March a series of restraining actions to slow monetary growth and nudge up short-term interest rates. However, many analysts felt those actions would not be enough to hold real output growth within the sustainable range where the inflation rate might remain low and stable. The nation's real growth in the first two quarters of 1988 already has been outside of the sustainable range, which tops out at around 3 to 3.5 percent today. First quarter real Gross National Product was 4.8 percent higher than in the first quarter of 1987; and second quarter output was 4.3 percent above last year. We do not have enough slack in idle equipment or labor to grow at rates above 4 percent for many more quarters before inflation moves into the 6 to 8 percent range, accelerating rapidly. If that were allowed to happen, with unacceptably high inflation a fact rather than a possibility, then eliminating the inflation would require a very restrictive monetary policy, essentially guaranteeing a recession. Nearly every forecaster's recession scenario up until August hypothesized that the Fed would do too little, too late this year to avoid higher inflation and then, by late 1989, feel compelled to fight inflation with a sharp tightening of money growth, causing a recession in 1990.

Thus, the Fed's August 9 action is a welcome antidote for inflationary fears: the Fed acted sooner and more decisively than expected to try to rein in our real growth and hold it to a more moderate rate in the 2 to 3 percent range. By doing so now they have, in my opinion, improved the odds that the U.S. economic expansion will survive not only through its seventh year, 1989, but through its eighth birthday on December 1, 1990.

Thank you, Chairman Greenspan, for a very appropriate and propitious ending to your first year as Chairman of the Board of Governors. RLP

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# VIRGINIA BUSINESS REPORT

BUREAU OF BUSINESS RESEARCH, SCHOOL OF BUSINESS ADMINISTRATION
THE COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VIRGINIA

Report No. 336 September, 1988

## Business in Virginia August, 1988

Of the seven indicators for which we have August data, the statewide totals for five fell below last year's levels: building permits, −8.5 percent; new car registrations, −6.6 percent; the VBR sample of retail sales, −1.9 percent; newspaper advertising lineage, −1.3 percent; and water consumed, −1.0 percent. The only two gainers during August were bank debits (dollar value of checks cashed), up 9.8 percent; and electricity consumed, rising 5.4 percent.

That five down, two up score for August is the same as the preliminary July score reported in the last issue. The difference this month is the two most volatile series, bank debits and building permits, traded places. Bank debits were in the negative group in July before bouncing back with the 9.8 percent advance noted for August. Such a rebound is encouraging, but little significance can be attached to the swing. For the year to date, bank debits for our sample of bank locations remain 5.9 percent below the same period last year, supporting other evidence of a shift to more conservative spending plans during 1988.

The building permit switch, from positive in July (+13.2 percent) to negative in August (−8.5 percent), also must be interpreted cautiously since this is an extremely volatile series from month to month. The swing, however, coincided with the Federal Reserve System's clear move to raise interest rates, demonstrating their commitment to restraining the nation's real output growth to a sustainable pace. Therefore, the pullback in Virginia building permits may at least partly be the reaction of Virginia builders to the prospect of higher interest rates and slower real growth following the Fed's action.

With August's decline in new car registrations, we now have seen three consecutive months of sales below last year's levels. That has dragged the cumulative January-August sales down to a slight 1.5 percent above last year. With rising interest rates and no spectacular incentive programs in force, new car registrations most probably will be down this fall, too, pulling the total sales for 1988 below the 1987 level.

The August retail sales per store by our sample of retailers was 1.9 percent below last August, and the cumulative change for the year-to-date is a nearly identical 1.7 percent decline. Those statistics continue to confirm the comments we hear from retailers indicating competition for the Virginia consumer's patronage has been fierce this year. Total consumer spending in Virginia has grown at a respectable pace, but the expansion of retail businesses has equalled or exceeded that pace in many parts of Virginia.

In the last issue, we assessed at some length the decelerating growth through June of total retail sales in Virginia (as measured by taxable sales subject to the 4.5 percent sales tax). Now we have July figures from the Virginia Department of Taxation showing a 20.3 percent statewide gain in taxable sales compared to July 1987, by far the largest monthly increase achieved in 1988. What happened? Did consumers suddenly reverse their June behavior and buy uncontrollably?

We do not think so. Our own sample of retailers did not experience any July jump, and neither did the new car dealers. In fact, both reported declines (as shown in last month's issue). We suspect the July taxable sales increase stems partly from late reporting of June sales. If so, then July's taxable sales figures are an overstatement; and the previous months' sales were understated.

**Chart I**

**Nine Selected Business & Economic Indicators Percentage Change**

Percentage Change August, 1988 from August, 1987

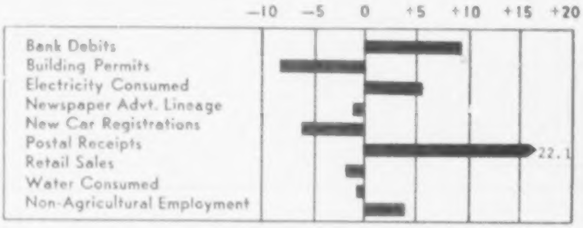
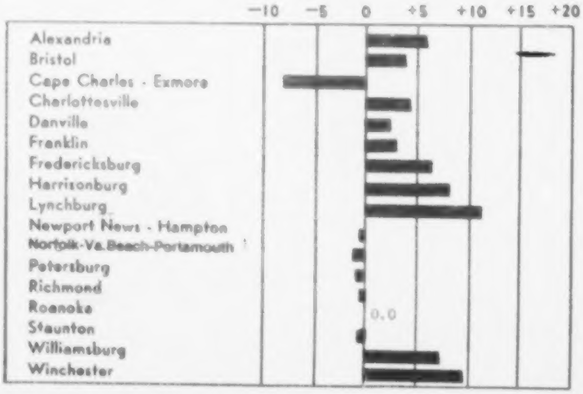


**Chart II**

**City Indices**

Percentage Change August, 1988 from August, 1987



# SELECTED BUSINESS AND ECONOMIC INDICATORS
# FOR 17 CITIES

**TABLE I** August, 1988

Monthly Index Number Comparisons of Current Month to Same Month in Base Period ([illegible]). Base Period = 100

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWSPAPER ADV. LINAGE | NEW CAR REGISTRATIONS | NON-AGRICULTURAL EMPLOYMENT # | WATER CONSUMED | RETAIL SALES † | POSTAL RECEIPTS |
|---|---|---|---|---|---|---|---|---|---|---|
| **The State** | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 106.1 | 131.1 | [illegible] |
| **Alexandria** | 154.2 | [illegible] | [illegible] | 130.6 | N.A. | [illegible] | [illegible] | 111.6 | 136.8 | N.A. |
| **Bristol** | 196.0 | N.A. | 75.8 | [illegible] | 82.9 | [illegible] | [illegible] | 116.7 | 126.3 | 298.3 |
| **Cape Charles - Exmore** | 123.8 | N.A. | [illegible] | N.A. | N.A. | [illegible] | N.A. | N.A. | 100.5 | 226.6 |
| **Charlottesville** | [illegible] | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | 152.5 | 237.7 | 363.3 |
| **Danville** | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 86.8 | [illegible] | 89.9 | N.A. | 267.0 |
| **Franklin** | [illegible] | N.A. | 12.2 | [illegible] | [illegible] | [illegible] | N.A. | 107.6 | 155.5 | 262.6 |
| **Fredericksburg** | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | 108.0 | 241.6 | 1815.2 |
| **Harrisonburg** | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | 97.3 | N.A. | N.A. | 136.7 | 315.5 |
| **Lynchburg** | 297.0 | 413.0 | [illegible] | [illegible] | N.A. | 84.7 | [illegible] | 166.5 | 201.6 | 1296.5 |
| **Newport News - Hampton** | 130.2 | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 119.0 | 169.9 | N.A. |
| **Norfolk - Va. Beach - Portsmouth** | [illegible] | [illegible] | [illegible] | [illegible] | | [illegible] | | 99.7 | 208.9 | N.A. |
| **Petersburg** | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | 125.5 | 129.0 | 246.0 |
| **Richmond** | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | | 138.7 | 172.2 | 570.9 |
| **Roanoke** | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | [illegible] | [illegible] | 121.2 | 158.8 | [illegible] |
| **Staunton** | [illegible] | [illegible] | [illegible] | N.A. | [illegible] | [illegible] | N.A. | N.A. | 121.6 | 215.8 |
| **Williamsburg** | 191.2 | 181.9 | [illegible] | 170.3 | N.A. | 167.9 | N.A. | 131.3 | 148.2 | 364.3 |
| **Winchester** | 153.2 | 412.0 | 126.0 | [illegible] | 215.1 | 112.9 | N.A. | N.A. | N.A. | N.A. |

**TABLE II** August, 1988

Percentage Change from same Month last Year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWSPAPER ADV. LINAGE | NEW CAR REGISTRATIONS | July NON-AGRICULTURAL EMPLOYMENT # | WATER CONSUMED | RETAIL SALES † | July RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| **The State** | | 9.8 | -6.2 | 5.4 | -1.3 | -6.6 | 4.1 | -1.0 | -1.9 | 20.3 |
| **Alexandria** | 1.4 | 30.9 | 58.3 | 10.5 | N.A. | -7.8 | 5.6 | 6.5 | -2.6 | 36.0 |
| **Bristol** | 4.0 | N.A. | -8.9 | 5.7 | -22.6 | -5.5 | 6.5 | 14.3 | 0.8 | 25.0 |
| **Cape Charles - Exmore** | -8.3 | N.A. | 192.1 | N.A. | N.A. | -5.3 | N.A. | N.A. | -16.8 | 11.5 |
| **Charlottesville** | 4.9 | 15.3 | -12.0 | 6.7 | N.A. | -11.2 | 5.0 | -0.8 | 10.5 | 8.6 |
| **Danville** | 2.5 | N.A. | 15.9 | 27.6 | 12.4 | -11.1 | -1.6 | -6.6 | N.A. | 13.8 |
| **Franklin** | 2.7 | N.A. | -58.8 | 11.0 | 5.7 | -44.7 | N.A. | -9.2 | 14.7 | 15.5 |
| **Fredericksburg** | 5.3 | 11.2 | 163.9 | N.A. | -2.9 | 8.8 | N.A. | 7.6 | -0.6 | 28.4 |
| **Harrisonburg** | 7.3 | 22.1 | 487.7 | N.A. | 12.6 | 9.3 | N.A. | N.A. | 4.2 | 11.9 |
| **Lynchburg** | 10.8 | 11.3 | 17.9 | 6.9 | N.A. | -16.2 | 1.8 | 30.9 | 11.6 | 22.9 |
| **Newport News - Hampton** | -0.5 | N.A. | -28.9 | 1.8 | 15.3 | -8.4 | 0.3 | -12.3 | -2.5 | 24.8 |
| **Norfolk - Va. Beach - Portsmouth** | -1.5 | 2.7 | 40.2 | 4.7 | | -16.2 | | -2.8 | -0.2 | 18.2 |
| **Petersburg** | -1.0 | 23.7 | 155.9 | N.A. | -6.8 | -19.4 | 1.8 | 2.9 | 0.3 | 7.5 |
| **Richmond** | -0.7 | 7.0 | -26.1 | 5.3 | -5.8 | -0.8 | | 1.7 | -9.1 | 16.6 |
| **Roanoke** | 3.0 | 17.8 | N.A. | 5.1 | 1.0 | -22.1 | -2.8 | -5.5 | -0.2 | 24.5 |
| **Staunton** | -6.9 | 0.9 | 10.2 | N.A. | 1.5 | -31.6 | N.A. | N.A. | 11.1 | -8.5 |
| **Williamsburg** | 7.1 | 4.7 | -41.3 | 8.8 | N.A. | 7.2 | N.A. | 3.2 | 5.8 | 13.1 |
| **Winchester** | 8.4 | 16.6 | 2.3 | 3.3 | 5.5 | 21.2 | N.A. | N.A. | N.A. | 7.7 |

**TABLE III**

Percentage Change January – August from same period last year

| CITY | CITY INDEX* | BANK DEBITS | BUILDING PERMITS | ELECTRICITY CONSUMED | NEWSPAPER ADV. LINAGE | NEW CAR REGISTRATIONS | Jan.–July NON-AGRICULTURAL EMPLOYMENT # | WATER CONSUMED | RETAIL SALES † | Jan.–July RETAIL SALES ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| **The State** | | -3.9 | 8.7 | 4.7 | -0.5 | 6.5 | 4.4 | 0.9 | 1.7 | 5.8 |
| **Alexandria** | 3.5 | 13.2 | 100.6 | 7.3 | N.A. | 1.8 | 2.7 | 2.2 | 7.1 | 3.9 |
| **Bristol** | 0.9 | N.A. | -1.3 | 2.9 | -11.9 | 14.0 | 5.6 | 10.1 | -6.9 | 1.8 |
| **Cape Charles - Exmore** | -5.8 | N.A. | 89.0 | N.A. | N.A. | 16.0 | N.A. | N.A. | -13.1 | -3.5 |
| **Charlottesville** | 5.1 | -11.2 | 11.1 | 4.0 | N.A. | 5.8 | 1.5 | 2.1 | 6.9 | 6.2 |
| **Danville** | 6.0 | N.A. | 60.7 | 14.7 | 2.6 | 14.5 | 1.9 | -8.3 | N.A. | 17.3 |
| **Franklin** | -3.9 | N.A. | 30.6 | 5.2 | 15.2 | -10.9 | N.A. | -8.2 | 2.7 | -14.7 |
| **Fredericksburg** | 5.6 | 9.9 | 150.9 | N.A. | -10.1 | 6.2 | N.A. | 16.2 | -0.2 | 5.7 |
| **Harrisonburg** | 9.7 | 8.8 | 31.0 | N.A. | 16.9 | 2.2 | N.A. | N.A. | 1.3 | 12.0 |
| **Lynchburg** | 2.8 | 8.7 | 118.7 | 2.9 | N.A. | 4.0 | 0.9 | 5.5 | 1.9 | 3.7 |
| **Newport News - Hampton** | -2.1 | N.A. | -0.1 | 1.4 | 2.9 | -5.0 | 1.3 | -8.7 | -1.5 | 0.0 |
| **Norfolk - Va. Beach - Portsmouth** | -0.6 | -10.5 | 5.6 | 4.9 | | -1.9 | | -0.6 | -0.6 | 1.4 |
| **Petersburg** | 1.9 | -21.3 | -6.1 | N.A. | 10.3 | 9.9 | 0.8 | 1.0 | 0.7 | 0.8 |
| **Richmond** | 1.4 | -6.8 | -47.4 | -4.7 | -2.1 | 0.9 | | 6.0 | -2.3 | 6.2 |
| **Roanoke** | 1.6 | 2.9 | N.A. | 5.0 | -1.3 | -5.1 | 2.3 | 2.7 | 0.1 | 11.8 |
| **Staunton** | 8.8 | -1.2 | 10.3 | N.A. | 9.7 | 7.9 | N.A. | N.A. | 11.7 | 4.9 |
| **Williamsburg** | 2.0 | -14.1 | 27.6 | 1.1 | N.A. | 0.1 | N.A. | 2.5 | 1.2 | 1.0 |
| **Winchester** | 1.4 | 9.7 | -73.3 | 0.1 | 5.0 | 13.0 | N.A. | N.A. | N.A. | 10.9 |

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*Computation of City Index is based upon a weighted arithmetic mean of all business and economic components listed except Building Permits and Bank Debits, which are excluded because of their highly erratic nature.

#Virginia Employment Commission data which lags behind current reports.

†Preliminary data based on a survey sample.

‡Revised data based on sales tax information which lags behind current reports.

⌐Only total MSA data are available for these areas

N.A. — Not Available
O.O. — No Change

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## ERRATA SHEET FOR TABLES II AND III (TABLE I IS CORRECT)

September, 1988

| CITY | Corrected Data for Table II<br>Percentage Change From Same Month Last Year<br>CITY INDEX | JULY NONAGRICULTURAL EMPLOYMENT | Corrected Data for Table III<br>Percentage Change January-August From Same Month Last Year<br>CITY INDEX | JAN.-JULY NONAGRICULTURAL EMPLOYMENT |
|---|---|---|---|---|
| The State | | 3.1 | | 4.2 |
| Alexandria | 5.8 | 6.2 | 1.9 | 6.1 |
| Bristol | 1.0 | 8.8 | 0.9 | 6.0 |
| Charlottesville | 3.6 | 5.3 | 5.5 | 4.[illegible] |
| Danville | 2.7 | 3.3 | 4.1 | 2.3 |
| Lynchburg | 10.7 | 5.4 | 2.8 | 1.0 |
| Newport News - Hampton/ | 2.8 | 3.1 | 2.1 | 3.4 |
| Norfolk - Va. Beach - Portsmouth | 5.3 | | 0.3 | |
| Petersburg/ | [illegible] | 3.8 | 1.9 | 3.8 |
| Richmond | [illegible] | | 1.5 | |
| Roanoke | [illegible] | 3.2 | 1.8 | -0.7 |

June taxable sales most likely were up somewhat, rather than down 2.4 percent as we reported last month; and July's sales are very unlikely to have, in fact, soared 20.3 percent from a year ago. Since both monthly results are suspect, our focal point for now is the cumulative year-to-date measure constructed by the Bureau. That indicates taxable sales in Virginia cumulatively during 1988 have increased 5.8 percent from comparable 1987 levels. Only moderate growth, well below last year's rate of 9.5 percent for the same period – but this year's rate almost certainly is below the recent percentage gains in Virginia personal income and, hence, more sustainable than last year's rate.

With August's negatives and shifting consumer behavior, how strong is the Virginia economy? The answer is best shown by nonagricultural payroll employment, our broadest and best coincident economic indicator. Virginia had 4.1 percent more payroll jobs in July 1988 than July 1987; and for January through July, the cumulative increase has been 4.2 percent. While less than the 4.7 percent for calendar year 1987, the current year job growth still is very strong, clear evidence that the Virginia economy remains a growth leader. RLP

## Virginia Travel, 1987

The Virginia Division of Tourism and the U. S. Travel Data Center annually publish an economic analysis of travel in Virginia during the preceding year, showing the estimated total travel expenditures and payroll, jobs, and tax receipts directly generated by travel in the Commonwealth and in each city and county. "Travel in Virginia 1987" now is available, so we will review some highlights and then offer some analysis of our own.

Virginia's travel industry is one of the State's major industries. For 1987, total travel expenditures in Virginia were estimated to be $6,903 million, directly generating $1,584 million in wages and salaries for 157,882 workers.

Those 1987 levels were the product of another year of exceptional growth for Virginia. Total travel expenditures were 13.7 percent above the 1986 amounts, a far higher growth rate than the 9.0 percent gain in Virginia's general retail sales. Similarly, travel-generated employment jumped 9.2 percent in 1987. That is almost double the 4.7 percent overall nonagricultural payroll employment growth and one of the highest individual industry job growth rates in Virginia for 1987.

Our own calculations with their data provide some insights on the sources of the travel growth. Out-of-state visitors to Virginia spent $4,356 million, accounting for 63.1 percent of the total travel spending. That was a gain over 1986 of 11.2 percent, slightly below the overall travel increase.

Another source of Virginia travel receipts is Virginians visiting Virginia destinations (with traveler defined as a person traveling away from home overnight or to a place 100 miles or more away from home for any purpose, except commuting to and from work). We benefit just as much from a travel dollar spent here by a Virginian instead of in another state as we do from the dollars of non-Virginians coming to the Old Dominion. The Virginia-to-Virginia travel spending in 1987 was $1,227 million, equal to 17.8 percent of the state's travel total. This in-state segment was the growth star in 1987, rising by 19.7 percent.

The third source of Virginia travel spending is the expenditures for such items as airline tickets by Virginians taking out-of-state trips. That amounted to $1,320 million or 19.1 percent of the total in 1987. These outward-bound expenditures grew by 16.9 percent over 1986. Thus, the travel expenditures by Virginians, both in-state and in heading to other destinations, grew more strongly than the spending by our out-of-state visitors. That is not surprising since Virginia is among the top ten states nationally in both the level and growth rate of per capita income. The high and rising standard of living being realized by most Virginians is a strong stimulus to more travel and recreational spending.

As usual, we also calculated the percentage changes in travel expenditures for various geographical areas: by city and county; localities grouped into the eight metropolitan statistical areas (MSAs); the additional groupings of cities and counties into 20 labor market areas (LMAs), a non-MSA market area designation used by the Virginia Employment Commission; alternatively, by Virginia's 22 Planning District Commissions (PDCs); and by interstate corridor across Virginia. We then examined the various geographical groupings in search of a pattern to the growth rates.

In 1986, the clear, dominant pattern was by interstate corridor. Grouping by interstate corridor no longer is the best framework for organizing the 1987 travel growth rates: there was as much variation along the corridors as there was between them, and there also were high-growth areas not on the corridors. Using PDCs also was inappropriate because results too frequently were not homogeneous within planning districts. The best 1987 structure seems to be a ranking by the 28 MSA and LMA areas. The results are shown in Table IV, with the MSAs and LMAs listed in descending order by percentage change in travel expenditures. Also included is the sum of the other 35 counties and cities NOT within either an MSA or LMA, listed as "Non-designated areas". The expenditure estimates for local areas only include spending by out-of-state visitors and Virginians traveling within Virginia, totaling $5,584 million statewide: that figure is the basis for the column showing the percentage distribution of travel expenditures by area. Shown separately is the outward bound travel spending of Virginians, since that amount cannot be allocated by locality.

The $5,584 million spent on Virginia excursions represents an increase of 12.9 percent over 1986. Only seven of the 28 designated areas experienced growth above that rate, and they will be our focal point.

The highest growth rate was the 35.8 percent achieved in the Essex County-Richmond County LMA, which straddles the Rappahannock River southeast of Fredericksburg. Skipping to third place, we find the Galax LMA, along the North Carolina border, with a gain of 23.6 percent. Neither of these areas lies on the three major interstate corridors.

In fifth position, with an increase of 21.2 percent, is the Northern Virginia MSA. This metropolitan area, the largest in Virginia, directly accounted for 36.6 percent of the 1987 travel expenditures in Virginia and 56.0 percent of the 1986-1987 growth. Sheer size did not prevent this area from achieving a remarkable percentage gain.

The other four of the top seven growth areas all are in the Shenandoah Valley along Interstate 81. The Radford LMA finished second, with a 23.8 percent rise, followed in fourth place by the Buena Vista LMA further north, with 21.5 percent growth. Skipping to the north end, Winchester ranked sixth with an 18.0 percent increase. Then, retracing our steps to the intersection of the I-81 and I-64 corridors, we come to the Staunton-Waynesboro LMA where the 1987 gain was 16.9 percent.

The 1987 growth stars included the largest MSA and some small LMAs; highly urban and very rural areas; and some areas off the beaten path. Northern Virginia and several Shenandoah Valley areas clearly were top performers. However, the dispersion of leaders was greater than in 1986. The dispersion also increases if we include the next five high-growth areas, those with growth rates over 10 percent. The 1987 Virginia travel data illustrates the state's travel industry not only is broadly based but also a dynamic growth industry with ever-shifting growth patterns. RLP

Table IV VIRGINIA TRAVEL SPENDING, 1987

| METRO/LMA | TRAVEL SPENDING (000) - 1987 | % OF VA TOTAL | % CHANGE 1986-1987 |
|---|---|---|---|
| Essex-Richmond LMA | $ 7,699 | 0.1% | 35.8% |
| Radford LMA | 71,418 | 1.3% | 23.8% |
| Galax LMA | 16,581 | 0.3% | 23.6% |
| Buena Vista LMA | 34,683 | 0.6% | 21.5% |
| Va. Portion of Washington, D.C. MSA | 2,041,507 | 36.6% | 21.2% |
| Winchester LMA | 46,909 | 0.8% | 18.0% |
| Staunton-Waynesboro LMA | 64,060 | 1.1% | 16.9% |
| Emporia LMA | 27,001 | 0.5% | 12.1% |
| Accomack-Northampton LMA | 54,725 | 1.0% | 11.9% |
| Cumberland-Prince Edward LMA | 10,420 | 0.2% | 11.8% |
| Richmond-Petersburg MSA | 532,543 | 9.5% | 10.5% |
| Martinsville LMA | 18,318 | 0.3% | 10.3% |
| Bath-Highland LMA | 123,802 | 2.2% | 9.9% |
| Norfolk-Va. Beach-Newport News MSA | 1,506,146 | 27.0% | 8.6% |
| Bedford LMA | 8,823 | 0.2% | 8.6% |
| King and Queen-King William LMA | 2,699 | 0.0% | 8.1% |
| Nondesignated areas | 364,263 | 6.5% | 8.0% |
| Lancaster-Northumberland LMA | 47,238 | 0.8% | 7.8% |
| South Boston LMA | $ 6,288 | 0.1% | 7.2% |
| Charlottesville MSA | 90,998 | 1.6% | 6.3% |
| Lynchburg MSAA | 77,178 | 1.4% | 5.7% |
| Roanoke MSA | 191,801 | 3.4% | 4.7% |
| Franklin-Isle of Wight-Southampton LMA | 4,888 | 0.1% | 2.8% |
| Harrisonburg LMA | 59,042 | 1.1% | 2.6% |
| Fredericksburg LMA | 84,576 | 1.5% | 2.0% |
| Covington LMA | 12,689 | 0.2% | 0.3% |
| Norton LMA | 9,613 | 0.2% | -3.9% |
| Virginia Portion of Bristol MSA | 44,025 | 0.8% | -4.6% |
| Danville MSA | 23,659 | 0.4% | -11.3% |
| State Total | $5,583,602 | 100.0% | 12.9% |
| Outbound travel of Virginians | $1,319,657 | 23.6% | 16.9% |
| Grand Total | $6,903,259 | 123.6% | 13.7% |

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